DOCUMENT RESUME

ED 173 234 SO 011 796

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TITLE The Development of Man and His Culture: New World Prehistory. Grade Two. Teacher's Guide [And] Teacher Background Material [And] Pupil Text [And] Pupil's Study Guide [And] A Sequential Curriculum in Anthropology. Test: Form 2, Composite Form for Pre- and Post-test. Publications No. 28, 29, 30, 33 and 41.

INSTITUTION Georgia Univ., Athens. Anthropology Curriculum Project.

SPONS AGENCY Office of Education (DHEW), Washington, D.C. Cooperative Research Program.

PUB DATE Mar 66

CONTRACT H-128/OE-4-10-204

NOTE 259p.; For related documents, see SO 011 790

AVAILABLE FROM Anthropology Curriculum Project, 107 Dudley Hall, University of Georgia, Athens, Georgia 30602 (Prices are available through project)

EDRS PRICE MF01 Plus Postage. PC Not Available from EDRS.

DESCRIPTORS American History; *American Indian Culture; *Anthropology; *Archaeology; Culture; Elementary Education; Field Studies; Grade 2; *Hopi; Instructional Materials; Multiple Choice Tests; Research Methodology; Scientific Methodology; Social Studies; Social Studies Units; *Teaching Methods

IDENTIFIERS Anthropology Curriculum Project

ABSTRACT

The social studies unit includes a teaching guide, teacher background material, student text, study guide, and composite pretest/posttest. Subject matter focuses on archaeological methods, history of man in America, and the Hopi Indians in the past and present. The unit is part of the Anthropology Curriculum Project and is designed to be used in the second grade one hour daily for 20-30 days. The unit objective is to provide students with a background for the understanding of man and his culture. Subject material is divided into three sections: a discussion of archaeologists and their methods, the origins and development of the American during the prehistoric period, and the Hopi Indians as an example of the continuation of the Southwest formative way of life into the 20th century. The teacher's guide suggests lesson plans for the unit, listing vocabulary, objectives and content, activities, review questions, educational media, and definitions. The teacher background materials examine the three subjects in detail and include charts, maps, and bibliographies. Drawings, maps, and charts illustrate the large print pupil text. The pupil's study guide introduces each subject, lists key words and ideas, suggests activities, encourages independent thinking by asking questions not answered in the text, and offers review questions. A vocabulary list and study exercises conclude the guide. The composite form for the pretest and posttest consists of 30 multiple-choice picture questions. (CK)

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The Development of Man and His Culture:

New World Prehistory

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SO 011 796

TEACHER'S GUIDE: GRADE TWO

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Under the supervision of Oscar T. Jarvis

Publication No. 30 / Anthropology Curriculum Project
University of Georgia / Athens, Georgia / March, 1966

TEACHER'S GUIDE

Grade Two

The Development of Man and His Culture

Anthropology Curriculum Project

Athens: University of Georgia

TEACHER'S GUIDE

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VOCABULARY (GLOSSARY)

THE DEVELOPMENT OF MAN AND HIS CULTURE

GRADE TWO

INTRODUCTION

A. Objective

The objective of this unit is to provide a background for the understanding of the development of man and his culture. The following fundamental principals should be emphasized:

1. Archeologists use definite and orderly methods in studying the past. These are: (a) archeological sites are located and classified; (b) archeological sites are carefully excavated using the proper tools and techniques; (c) archeological sites are dated using either relative or absolute dating methods; (d) the results of an archeological excavation are interpreted and published.

2. Archeological excavation can recover only a part of the past.

3. The entrance and development of man in the New World followed a certain sequence. This was: (a) Man entered the New World as Homo sapiens, at least 10,000 years ago, following or hunting for large game animals by way of the Bering Straits; (b) American Indians developed various stages of culture; (c) these stages of culture were not in the order of a developmental sequence except in Nuclear America.

B. Rationale of the Anthropology Curriculum Project

The construction of the curriculum in anthropology by the Anthropology Curriculum Project at the University of Georgia, under a grant from the U. S. Office of Education, is based upon several premises, among which are:

1. Any field of knowledge, such as anthropology, consists of a system of symbols, or word labels, which are used to express ideas and describe relationships. An understanding or mastery of any field of knowledge begins with an understanding of the symbol system, the meaning of which expands and develops as the knowledge of the discipline is extended.

2. Symbol systems are usually organized for transmission of a core of congruent ideas, usually referred to as subject matter, discipline, or field. For almost thirty years the social studies movement has contended that a subject approach to the transmission of social studies is inappropriate for the elementary grades. It is thought that any type of organization of material, irrespective of its method, is designed

to transmit knowledge, and that there is nothing incompatible, except preference and tradition, with a subject presentation of a social science in the elementary grades.

3. Anthropological material is frequently used in the public school, but, in the absence of emphasis on anthropological concepts and terminology, the contribution that anthropology has to make to an understanding of man and of different cultures is frequently obscured. The material deliberately introduces anthropological terminology which may at first be somewhat difficult for the student. As his familiarity with these terms increases, however, it is expected that they will help him to organize and interpret in a more meaningful manner the world in which he lives.

C. Vocabulary

Anthropology, like any field of study, uses many terms. Some of these terms are new words that have been introduced into our language by the anthropologist. Some of these new words have been taken from the language of the people, studied by the anthropologist and found to contain examples of the item in question. For example, in the material on the Hopi the word kiva is used for an underground place of worship. Other terms may be old words that are used by the anthropologist in special ways. For example, "culture" is used to designate the sum total of things that man learns in common with the other members of the group to which he belongs. It is not used in the older more popular manner to designate refinement.

A Word List is included in the instructions for each lesson topic. A Vocabulary at the end of the TEACHER'S GUIDE defines the words. The anthropological terms in the word list and vocabulary segment of the teacher's guide have been designated by an asterisk. They are defined in the glossary section of the teacher's guide. These terms have been included primarily for the benefit of the teacher in helping her to understand more precisely the discrete information pertaining to each culture.

It is not intended that the teacher will attempt to teach all of the anthropological terms. Only the most important terms should be selected to transmit an understanding of the various objectives as outlined in the teacher's guide. For example, it is far better that the student understand the basic idea of dating than to spend a lot of time mastering such types of dating as potassium-argon and carbon 14. Whenever the teacher encounters difficulty in using technical anthropological terms, he may wish to emphasize appropriate synonyms of a simpler nature.

The teacher should determine the vocabulary which is peculiar to each lesson in the student's book and introduce these terms in building readiness for the lesson.

D. Basic Philosophy of the Materials

The material presented in this unit attempts to lead to a better understanding of man in the New World. Man has always been able through the ages to adjust to his environment. A study of prehistory will serve to show how man has been able to make these adjustments and come to be what he is today. Archeologists attempt to show evidence of man in the past. They unearth remains of man and records of the changes man and his culture have undergone in the past.

The lessons are designed to present some of the basic concepts in the Outline of Basic Concepts in Anthropology. Throughout the materials, these concepts are emphasized. Learnings should be based on these concepts and the factual background given to support them. The background material written for the teacher should be studied thoroughly by the teacher before an attempt is made at class presentation.

E. Appraisal

In order to evaluate the development of the pupil's comprehension of the materials presented, two tests have been prepared. A pre-test will be given before any of the lessons are taught. A post-test will be used to measure comprehension of the completed unit. The teacher may wish to use other forms of evaluation as a part of the daily presentation of the materials. It is suggested that a mid-unit test prepared by the teacher might help in analyzing pupil progress.

SUGGESTIONS FOR USING THE TEACHER'S GUIDE

The manner in which the anthropological materials are used will be of vital importance to the success of the Anthropology Curriculum Project. The material for the second grade unit, "The Development of Man and His Culture," consists of the following items:

Materials for the Teacher:

- Teacher's Guide
- Archeological Methods
- New World Prehistory
- Hopi Indians
- Glossary of Terms

Pupil's Books:

- Archeological Methods
- New World Prehistory
- Hopi Indians
- Glossary of Terms

Tests:

- Pre-test
- Post-test

The unit should require a period of about twenty to thirty instructional days. The following schedule is recommended by the project but is not compulsory for teachers to follow. If it is followed closely, each content area of the unit will receive its proportionate share of time.

THE DEVELOPMENT OF MAN AND HIS CULTURE
(Grade 2)

Day(s)	Daily Lesson Topics
1	Pre-test
2-9	Archeological Methods
10-17	New World Prehistory
18-25	Hopi Indians
26	Post-test

Procedure for Teaching the Unit

Although each teacher is at liberty to establish his own procedure for developing the unit, the following guide is suggested as an acceptable mode.

1. Pre-test - The pre-test must be administered on the first day in order to obtain the initial achievement level of the children so that gains can be measured. The pre-tests will be mailed to the teachers in plenty of time for them to be administered to the pupils the first day the unit begins. Instructions for administering the tests will accompany them.

2. Archeological Methods. The material on "Archeological Methods" should take approximately eight school days and should follow the pre-test of the first day. Teachers should study thoroughly the essay on "Archeological Methods," the objectives to be accomplished, vocabulary, and review questions contained in the teacher's guide before attempting to teach this lesson.

Good teaching procedure would likely dictate that this unit be introduced with a general class discussion on "ways to find out how people lived long ago." Doubtless suggestions will vary from some very sound ideas to some that are rather "far out." The teacher can then use these ideas as a base for introducing the first material in this section, "An Archeologist at Work."

3. New World Prehistory. This topic should take approximately eight school days. Begin by reading the teacher essay on this material through to get a feel of the scope and sequence of the material to be taught. It might be appropriate to start this section of the material with a question and answer period in order to determine what ideas the children hold about Indians. The incorrect stereotype of the warbonnet, tepee, and totem pole for all Indians is too often most common. The "mystery" of the origin of the American Indian can also be used to introduce this section. A bulletin board can be put up before the end of the previous unit to create interest.

4. Hopi. Because of its direct connection to the previous section, the introduction of this material should present no problem. The topic covering the Hopi should cover about an eight-day period. The teacher should spend some time reading the background material on the Hopi before beginning to teach the unit. By systematically covering these materials, the pupils should be able to obtain a very good idea of the life of this interesting group of American Indians.

Some of the suggested activities of the study guide will take quite a while to develop and may have relevance to more than one of the study topics. Teachers should not be concerned that a chosen activity must be completed within the time allotted for a given topic unless it is imperative that final outcomes of the topic hinge on that particular activity. Otherwise, one activity may overlap with two or more topics. Examples of this may occur with the student's scrapbook, mural, etc.

4. Summary and Review. The teacher should allow approximately two days at the conclusion of the unit to review and summarize the learnings which have transpired. The objectives listed in the study guide along with the review questions will provide a source of information for the teacher to use in completing this important segment of the unit. Also, the teacher may wish to have a culminating activity in which parents are invited into the room to see the displays of the three cultures which have accumulated during the developmental phases of the unit. At that time, children may wish to give oral reports about certain aspects of their studies.

5. Post-test. The last day should be set aside for the giving of the post-test. These materials will be mailed to teachers in time for their administration along with directions for their usage.

Daily Time Required for Teaching the Unit. The unit "The Development of Man and His Culture" is to replace another social studies unit which would have been taught in the regular program of the school. The amount of daily time which should be allowed for the teaching of the unit will be determined by each teacher participating in the project. It is likely, however, that at least one hour per day should be allocated for this unit. It is conceivable that if pupil interest warrants, the teacher may choose to spend more than one hour daily. Also, on days when activities such as a mural are being done, much more time may be required.

CHAPTER I

ARCHEOLOGICAL METHODS

A. Introduction

The content of this chapter on Archeological Methods presents to children the idea that archeology is a science. It therefore emphasizes the methods and techniques used by archeologists, and does not emphasize famous archeological sites or archeological finds. The teacher, however, may use historical accounts to give the sense of archeological excitement which may appear to be missing in this chapter. The objective to be obtained, however, is a knowledge of archeological methodology, and this objective should be kept uppermost in using related materials, such as those suggested in the bibliography. In discussing related materials which may be used, the teacher should be careful to use the technical vocabulary presented in the chapter. This is to help the students become more familiar and confident in the use of archeological terminology.

B. Vocabulary

*absolute dating
*archeology
*artifact
*calendrical dating
*carbon 14 dating
*ceremony
*chipping station
*cultural traits
*culture
dehydration
*dendrochronology
excavation
*habitation
*innovation
organic
periphery
*potassium-argon dating
*preservation
*primitive
quadrant
radioactive
*relative dating
*salvage archeology
*seriation
*site
strata
stratigraphy
*surface collection
*test pits
*test trenches

C. Objectives and Content

The objective of this section is to help children understand the methods and techniques used by archeologists in studying the past.

1. Archeology is the scientific study of the material remains of past human life and activities.

2. Archeology is important because:

    a. It sheds light on the history of man and on the course of his development.

b. It helps us to better evaluate our own culture and understand how we came to be as we are.

3. History of archeology:

   a. Schliemann's work at Troy was the first effort at a real interrelation of archeology, history and prehistory.

   b. Man has long been interested in digging into the remains of the past. Ancient cultures often recovered objects from preceding ones.

   c. The Renaissance in Europe brought about renewed appreciation of the sculptures, pottery, and other objects from the ancient cultures of Egypt, Italy, and Greece.

   d. Excavations in the early days of America were for the most part haphazard and clumsy.

   e. Only in the past hundred years has archeology become one one of the recognized sciences.

4. Definition of field archeology:

   a. Field archeology is the use of scientific methods for excavating ancient materials.

   b. The historical importance of an object depends very much on its associations with other objects in context.

5. How things get buried and preserved:

   a. An accumulation of man's own waste builds up in layers.

   b. Decay and soil formation cover former surface areas.

   c. Volcanic action has at times buried living areas.

   d. Destruction of a city by fire and pillage is another way things get buried.

6. Steps necessary in locating, classifying, and preparing to excavate an archeological site:

   a. Sites are located by:
      (1) chance
      (2) a careful search by an archeologist

   b. Sites are classified according to:
      (1) location
      (2) use
      (3) historical content

c. Before excavation begins certain steps are necessary, such as obtaining the permission of the owner of the land.

7. Procedure and tools necessary to excavate an archeological site:

   a. Methods of excavation include:
      (1) trenching
      (2) digging a pit
      (3) working one or more quadrants
      (4) a combination of these methods
      (5) total excavation

   b. An archeologist's tools may be any implement that seems to get the job done:
      (1) Brushes
      (2) Knives
      (3) Baskets
      (4) Screens
      (5) Shovels
      (6) Picks
      (7) Trowels

   c. After the work of digging and recording is completed, refilling the excavation may be necessary.

8. Methods used in dating an archeological site:

   a. Relative dating methods:
      (1) defined - this method does not specify which year, but indicates whether an object is older, of the same age, or more recent than another.
      (2) Examples
         (a) stratigraphy
         (b) seriation
         (c) use of past flora and fauna
         (d) geological relationships

   b. Absolute dating methods:
      (1) defined - this method gives a more or less fixed date such as A.D. 1000.
      (2) Examples
         (a) calendrical dating
         (b) dendrochronology
         (c) carbon 14 dating

9. Interpretation of findings from an archeological site study:

   a. Placing the site in time and space.

   b. Evaluating it in relation to other sites and cultures.

   c. Reconstructing the culture.

   d. The life of the people.

   e. Many artifacts are lost due to deterioration.

   f. Non-material traits of a culture are not recovered.

10. Publication of findings from an archeological excavation:

   a. Why publication is necessary:
      (1) An unreported and unpublished excavation robs archeologist of knowledge which is sometimes irreplaceable.
      (2) Once a site has been excavated, it is usually destroyed.

   b. Characteristics of good reporting:
      (1) The report is easily understood.
      (2) It begins with a short summary and topic headings.
      (3) A review and interpretation of the findings follows.
      (4) All data is given.
      (5) Tables and pictures are used.

D. Activities - Some activities which can be utilized to accomplish the objectives for this segment on Archeological Methods follow. The teacher can select those most appropriate for his own classroom.

   1. Activity: Museum Field Trip

      a. Purpose - To see actual artifacts and help children see that they are not mere fantasy.

      b. Materials - Transportation to and from resource; cameras.

      c. Procedure - Contact a museum which the school has access to and reserve a time with a guide to show children the portions of the museum relative to the material being studied.

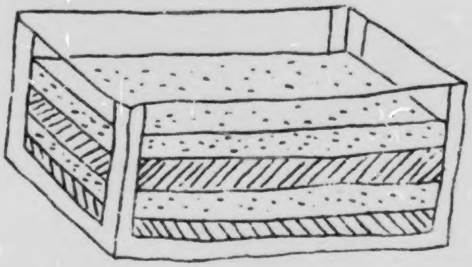
   2. Activity: Terrarium Showing Stratification

      a. Purpose - To acquaint the children with stratification, and show how it can help determine the date of an artifact found by archeologists.

      b. Materials - Large glass container, sand and dirt, and artifacts. In lieu of actual prehistoric artifacts such as arrowheads, etc., bottle caps, broken flower pots, etc. may be substituted.

c. Procedure - Build up layers of sand and dirt in the glass container, placing the artifacts in the various layers.

d. Illustration -



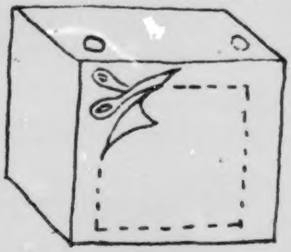
3. Activity: Frieze showing steps necessary in making an archeological excavation.

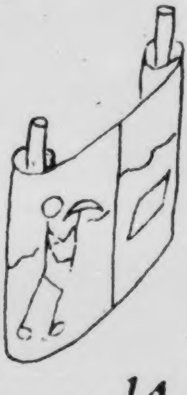
a. Purpose - To help children visualize the steps necessary in conducting an archeological excavation.

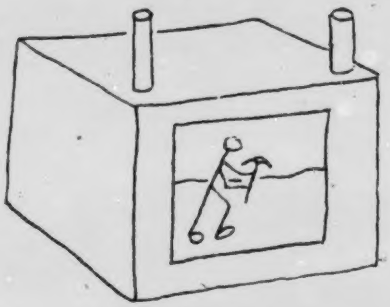
b. Materials - Large cardboard box, two broomsticks or similar wooden dowels, roll of paper, and crayons or paint.

c. Procedure - On the roll of paper have the children draw a series of pictures showing the steps necessary in conducting an archeological excavation. Cut a square out of the front of the box. Place the roll of paper on the two wooden dowels and into the box so that the pictures can be seen through the opening in the box. The roll of paper can then be rolled on the dowels and the pictures will appear one at a time in the opening.

d. Illustration -







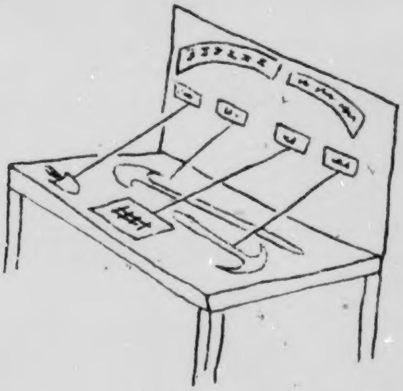
4. Activity: A Display of the Tools of the Archeologist.

   a. Purpose - To show to the children the tools used by the archeologist.

   b. Materials - Picks, shovels, mattocks, trowels, screens, tongue depressors, dentist's probes, ice picks, paint brushes, whisk brooms, insect spray gun, poster board, crayons or paint, and colored yarn.

   c. Procedure - Display the tools in front of a bulletin board. Put the names of the tools on posters and place the posters on the board. Run colored yarn from the name of the object to the tool on the table.

   d. Illustration -



E. Review Questions

1. Suppose you had gone camping recently. Would someone in the future be able to tell that you had camped there? Why or why not?
2. What type of artifacts might our culture leave behind for archeologists of the future to find?
3. Which type of site would tell you the most about a culture of the past, a habitation site or a chipping station? Explain.
4. Which type of date would be the best to have, a relative date or an absolute date? Why?

5. Do you think a carefully made piece of pottery found near the surface of the ground was probably made at a latter date than a roughly made arrowhead found deep in the ground? Explain.

6. Why is it necessary for an archeologist to make a careful record of what he finds.

F. Educational Media

1. Children's Books

Elting, M. and F. Folson
1960 The Story of Archeology in the Americas. New York, Harver House.

Covers discovery and excavation of Cliff Palace in Mesa Verde Park. Discusses artifacts found. Illustrations good. Also, discussion of discovery and excavation of Tikal, Guatemala, and Chichen Itza. Olemecs, Aztecs covered. Reference to dating techniques.

Friedman, E.
1958 Digging Into Yesterday. New York, Putnam Co.

This book concerned with the Valley of the Kings, Chichen Itza, Yucatan, and gives a picture of archeologists at work. Each chapter is accompanied by a decorative and useful map.

Halden, R.
1960 Secrets in the Dust. New York, Dodd, Mead and Co.

This is the story of archeology. Discusses cave paintings, Egyptian tombs, the last civilizations of Central America, the accidental unearthing of prehistoric tools in the American Southwest, and the "City of Ivory Eyes" in Alaska.

Hibben, F.
1960 Digging Up America. New York, Hill and Wang.

This book discusses dating techniques, entrance of the Indians to the New World. Examines the Mound Builders of the Mississippi Valley, the Pueblos of the Southwest (with chronology), and the Incas.

Kubie, Nora
1957 The First Book of Archeology. New York, Franklin Watts.

The author presents the history of the development of the field of archeology. Describes the methods that an archeologist uses in locating and excavating a site. Grid method illustrated.

Scheele, Wm.
1960 The Mound Builders. New York: World Publishing Co.

Discusses the significance of the mound sites that the early explorers discovered on their journeys through the New World.

Silverberg, R.
1963 Sunken History: The Story of Underwater Archeology. New York, Chilton Books.

Concerned with archeological finds in the Mediterranean.

2. Teacher's Books

Clark, Grahame
1964 Archeology and Society. New York, University Paperbacks.

Hole, Frank and Heizer, Robert
1965 An Introduction to Prehistoric Archeology. New York, Holt, Rinehart and Winston.

Heizer, Robert, ed.
1959 The Archeologist at Work. New York, Harper and Brothers.

Poole, Lynn and Poole, Gray
1961 Carbon 14 and Other Science Methods That Date the Past. New York, McGraw-Hill.

Suggs, Robert C.
1962 Modern Discoveries in Archeology. New York, Thomas Crowell.

Wheeler, Sir Mortimer
1961 Archeology from the Earth. Baltimore, Penguin Books.

3. Subject Area Books

Ahlschwede, Ben
1963 Exploring the Old World. New York, Follett, pp. 18-29.

Selection on primitive man and the contribution that archeology has made to our knowledge of him.

Archeology
1958 The World Book Encyclopedia. Field Enterprises Ed. Corp. pp. 362-365.

Selection concerned with the collection and interpretations of archeological materials, and the most recent findings.

Bond, G., _et_ _al_.
1958 _Deeds of Men_. Chicago, Lyons and Carnahan.

This is a unit of stories directly related to archeology. There are definitions of related terms, illustrations of archeologists at work on sites.

Cooper, K, C. Sorenson, and P. Todd
1964 _The Changing Old World_. Morristown, N. J., Silver-Burdett, 9-13, 20-36.

Discussion of how fossil finds give clues to the past and add to our store of knowledge of the present. Reference to beginning of civilization.

4. Audio Visual Aids

a. Films

Archeologists at Work. (Film Assoc.)

Shows two archeologists excavating a site in the southwestern part of the United States. The artifacts found give clues to the lives of the ancient peoples of this region. Tree ring and C-14 are used to date findings.

Learning About the Past. (Indiana University)

Discusses how the archeologists work at excavating a Mound site. Included are the sorting and cataloging of artifacts, the reconstruction of an Indian stockade, and dioramas of selected American Indian cultures.

Yucatan: Land of the Maya. (Walt Disney)

Recent excavations by scientists using modern tools and technology to uncover ancient structures in an effort to gain an insight into the life of the Maya Indians.

Dating Their Past. (Nebraska Council for Educational Television)

Determination of the age of prehistoric artifacts uncovered in the Great Plains. Also, a geological "time clock" of nature's events

Oregon's First Residents. (Oregon Centennial Commission)

Shows how archeologists and geologists have fitted together excavated items from the past to tell the story of the Indians who lived in southeastern Oregon and along the banks of the Columbia River.

Point of Pines. (New York University)

Excavations of prehistoric Indian sites by the Archeological Field School of the University of Arizona. The surface of the ruins is first combed for artifacts. An artificial grid is plotted, test trenches laid out, and the digging begins. When the floor level is reached, the finds are analyzed. In the laboratory the artifacts are cleaned, catalogued and photographed.

River Valley Archeology. (University of Georgia)

Excavations of prehistoric Indian sites by the Archeological Department of the University.

b. Filmstrips

How We Know About Life Long Ago. (Society for Visual Education)

Describes the methods used in hunting fossils, and describes what has been found. No mammalia are included.

Hunting Fossils. (Society for Visual Education)

Describes how fossils are formed, where they can be found, how to identify them, and the general technique of interpretation. Shows the excavation of a skull, and the technique used in restoring dinosaur remains.

c. Flat Pictures

Ruins of Cuicuilco . . . (National Geographic, Vol. 44, July-December, 1923: 203-220)

Photographs of the excavation of Cuicuilco.

Chichen Itza, An Ancient American Mecca. (National Geographic, Vol. 47: 63-95)

Photographs of excavated temples, palaces.

Russell Cave: New Light on Stone Age Life. (National Geographic, Vol. 93, March, 1958)

An analysis of the archeological technique used in the excavation of Russell Cave.

Mesa Yields Secrets of the Cliff Dwellers. (National Geographic, Vol. 116, Feb. 1954: 155-195)

Pictures of cliff dwellings and artifacts of the period.

Archeology Under the Sea. (National Geographic, Vol.124, July 1963: 525-646)

Pictures of skin divers working on underwater archeology.

History of a Dig. (Scientific American, March 1955: 98-104)

Pictures of excavations on the coast of Peru showing pottery and wall paintings.

The History of a Peruvian Valley. (Scientific American, Aug. 1954: 28-34)

Pictures of excavations and a chart of pottery types.

Underwater Archeology in the Mayan Highlands. (Scientific American, March 1959: 100-113)

Pictures of artifacts recovered by underwater archeology.

Early Man in the Andes. (Scientific American, May 1963: 117-128)

Excavations and artifacts showing the habitation sites of early man in the Andes.

Prehistoric Man in Mammoth Cave. (Scientific American, July 1960: 130-140)

Pictures of the artifacts left by early man in Mammoth Cave.

The Aleuts. (Scientific American, Nov. 1956: 113-120)

Excavations of an ancient village and an ancient burial of the Aleuts shown.

CHAPTER II

NEW WORLD PREHISTORY

A. Introduction

The primary objective of this section is to transmit to children a knowledge of the origins and development of the American Indian during the prehistoric period.

In teaching this chapter, the teacher should attempt to correct the stereotype which emerges from American history books that portray the Indian merely as a primitive contemporary of the European invader and colonist. While the appearance of *Homo sapiens* in the New World is recent, compared to his appearance in the Old World, Indians had been in the western hemisphere thousands of years before this land became known to Europeans. In this long period, the culture of the Indian went through several stages of development. The earliest two, that of the Paleo-Indian and the Archaic Stage, were the most widespread. Throughout the western hemisphere, the Archaic Stage succeeded the Paleo-Indian Stage as the big Ice Age animals died out. But some Indians never advanced beyond the Archaic Stage of generalized hunting and gathering, and were found in this stage, both in North and South America, in the middle of the nineteenth century when first encountered by the white man. Only in Nuclear America are all five stages to be found. In what is now the United States, most Indians had entered into the Formative, or agricultural-village stage, at the time of European discovery and colonization. Indians in the Formative Stage supplemented their economy with hunting, but they were not nomadic hunters. They lived in villages, grew corn and other garden products, and sent out hunting parties. The Plains Indian of the nineteenth century is an exciting but transient phase in the long history of Indian life in the western hemisphere.

B. Word List

aboriginal
Archaic Stage
artifact
atlatl
Aztec
Bering Strait
Classic
Desert or Southwestern Culture
effigies
Eskimo
extinct
fauna
flaked
fluted
Formative Stage
fossil
Falsom Culture
Inca
incised
innovation
javelins
maize
manioc
Maya
migration
mound
Nuclear America
Paleo Indian Stage
Plains Indians
Post Classic Stage
Southern Cult
stelae
technology
tipi
urban
Woodland Culture

C. Objectives and Content

(The primary objective of this section is to lead children to an awareness of the origins and development of the American Indian during the prehistoric period).

1. The Indian groups of the Americans entered the New World by way of the Bering Straits.
    - a. The only men to ever inhabit the new world were Homo sapiens.
    - b. The date of this entry was at least 10,000 years ago.
    - c. The migration to the New World was probably made during a period when Asia and the New World were connected by a land bridge caused by the drop in the water level of the ocean in a period of glaciation.
2. The cultural development of the American Indian is divided into stages, or cultural periods.
    - a. Hunters in the Paleo-Indian stage entered the New World following, or in search of large mammals such as the mammoth.
    - b. In the Archaic Stage, starting about 5,000 B.C., Indians began to have a more varied diet based on a more total exploitation of the environment, such as gathering plants and shell fish and fishing.
    - c. The Formative Stage is characterized by the development of settled village life and the development of corn as the principle source of food.
    - d. The single most isgnificant aspect of the Classic Stage in Nuclear America was the development of large urban ceremonial centers.
    - e. During the Post-Classic period in Nuclear America, concern with the fine arts and religion developed during the Classic period became subordinate to a concern with warfare.
3. The stages of American Indian Culture did not occur in all areas of the Americas.
    - a. Big-game hunting (Paleo-Indians) remained the principle subsistence activity in some parts of the Plains until near historic times.
    - b. The Formative Stage was reached in only two areas of North America, the Southwest and the East.

   c. The Classic and Post-Classic Stages developed only in Nuclear America.

   d. The only real cities in the New World occurred in Nuclear America.

4. The Eskimos and the Plains Indians were late developments among the native groups of North America. They do not fit the five cultural stages listed.

   a. The oldest Eskimo ruins that have been found are only about 4,000 years old.

   b. The Horse Culture of the Plains Indians was possible only after the introduction of the horse by the Europeans and did not reach its fullest development until about 1800.

D. Activities

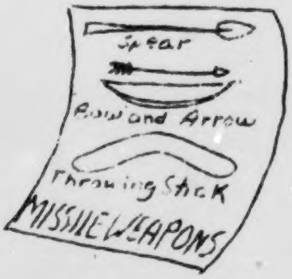
1. Activity: Chart of Missile Weapons.

   a. Purpose - To acquaint the children with the missile weapons used in the New World.

   b. Materials - Poster paper, ink, magic marker or crayons.

   c. Procedure - Make a chart showing several different types of missile weapons.

   d. Illustration -



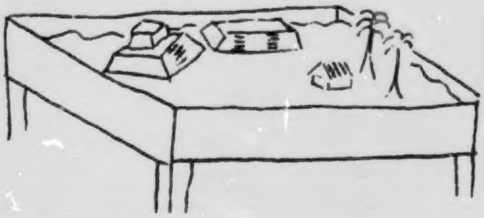
2. Activity: Sand table model Mayan Village.

   a. Purpose - To see graphically a model Mayan Village with Temple and related buildings.

   b. Materials - Sand table, sand, clay, glue, construction paper, cardboard, and crayons or paint.

c. Procedure - In the sand table construct a Mayan Village showing the various buildings, the temples, ball court, and houses.

d. Illustration -



Note: This type of activity may be applied to any of the cultures of prehistoric America.

3. Activity: Creative Writing.

    a. Purpose - To help children organize their thoughts about life in prehistoric times and record them in an imaginative, logical, and coherent manner through the medium of creative writing.

    b. Materials - Pencils, paper, and crayons.

    c. Procedure - Have each child write a story about himself as if he were living in a particular prehistoric culture. Encourage children to use their imaginations. Have each child illustrate the story he writes.

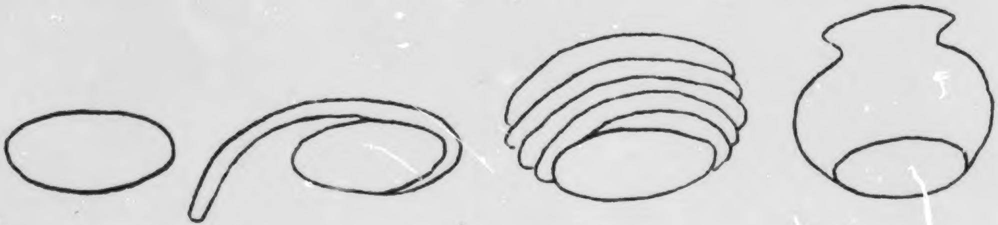
4. Activity: Pottery Making.

    a. Purpose - To teach the children the basic steps in the making of clay pottery.

    b. Materials - Red or white clay and water.

    c. Procedure - Add enough water to the clay so that when it is kneaded it produces a soft pliable mass. A pancake is formed to provide the bottom of the pot. The next step is to form the clay into rope-like coils. A coil of clay is added to the base, then circuit after circuit is added. After the desired height is reached the pot can then be smoothed with the hands or a spoon. After drying, the finished pot may be fired in a kiln.

d. Illustration -



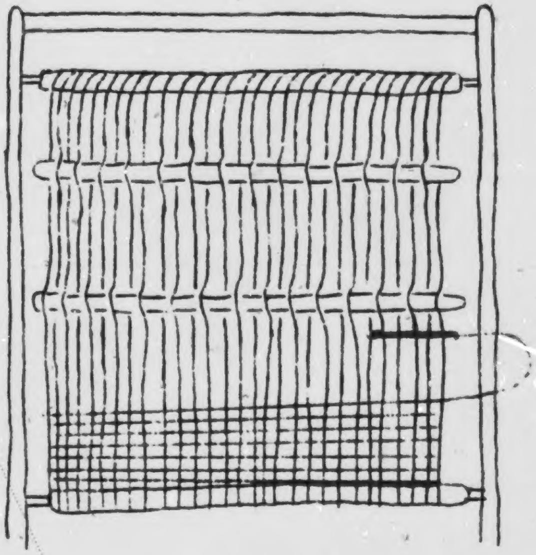
5. Activity: Weaving.

a. Purpose - To demonstrate the basic technique of weaving on a vertical loom.

b. Materials - Two horizontal poles of ½ inch stock, with rounded ½ inch pegs on each end, about 6 inches long; two uprights of 2 x 1" stock, 12 inches long, with holes for horizontal poles; pin nails set ¼ inch apart on horizontal poles; cotton thread for warp; knitting yarn for wool.

c. Procedure - Prepare loom frame; tie warp threads to bottom pole of loom, leave sufficient play for rolling (about double or triple length), and tie warp threads to upper poles of loom; roll warp tight to upper loom; insert pencil between alternate threads of warp; push weft thread through with the shuttle; repeat procedure.

d. Illustration -



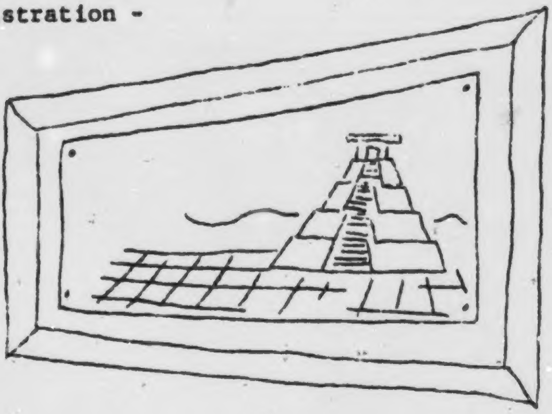
6. Activity: Aztec Mural.

   a. Purpose - To help the children gain knowledge of the Aztec culture.

   b. Materials - Roll of paper, crayons, colored chalk or tempra paints.

   c. Procedure - Guide children in designing and drawing a mural showing some aspects of Aztec life, such as temples, military life, etc.

   d. Illustration -



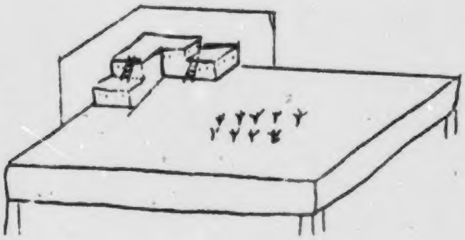
7. Activity: Clay Model of Cliff Village.

   a. Purpose - To acquaint children with housing of Pueblo people.

   b. Materials - Table, clay, sticks or tooth picks.

   c. Procedure - Construct a model of the cliff dwellers' houses using clay for the walls and the sticks for the beams and ladders.

   d. Illustration -



E. Review Questions

1. Why do you think early man came to the New World?
2. Why did man stay in the New World?
3. Why do archeologists find so few artifacts from which to study about the Paleo-Indians?
4. What did the archaic Indians hunt for food when the large animals were no longer available? What different weapons and tools would this require?
5. Why is growing food by farming a better way than hunting and gathering?
6. Why is it believed that the Eskimos were one of the last groups to move to the New World?
7. Describe some of the ways the various Indian groups differed from one another during the period just before European contact.

F. Educational Media

1. Children's Books

Baity, E.
1951 Americans Before Columbus. New York, Viking Press.

Discussion of the Inca and Aztec cultures.

Baldwin, G.
1963 The Ancient Ones: Basketmakers and Cliff Dwellers. New York, Norton.

This book presents a discussion of the Indians who lived in the Southwestern region of the United States. Many illustrations pertinent to the material.

Bleeker, Sonia
1960 The Incas of the Andes. New York, Morrow and Company.

Describes the history of the Inca through their destruction by the Spanish.

Bleeker, Sonia
1963 The Aztec Indians of Mexico. New York, Morrow and Company.

Brief discussion of the Aztec Empire, 1168-1520.

Bunce, William
1942 Chula, Son of the Mound Builder. New York, E. P. Dutton and Company, Inc.

This book attempts to portray Indian life in the Mississippi Valley region prior to white contact. Presents the archeological material in story form.

Burland, C.
1962 Finding Out About the Incas. New York, Lothrop, Lee and Sheppard Co., Inc.

Colbert, E.
1958 Millions of Years Ago. New York, Thomas Crowell.

Chapter 8 introduces man into the New World and describes what America was like at this time.

Fletcher, S.
1954 The American Indian. New York, Grosset and Dunlap.

Several chapters devoted to the entrance and spread of Indians and their cultures. Describes the cultures of the Cliff Dwellers, the Mayans, and others.

La Farge, O.
1956 A Pictorial History of the American Indian. New York, Crown Publishing Company.

Traces the spread of the civilizations of South America and Mexico northward, correcting many misconceptions and reconstructing in great detail the life of the Indians in North America.

Marriott, A.
1952 Indians of the Four Corners. New York, Thomas Crowell.

Tells about the large-walled apartment-house 'cities' that were built many years ago (Anasazi); how their culture changed as their weapons changed.

Von Hagen, V.
1958 The Sun Kingdom of the Aztecs. New York, World Publishers.

Discusses who the Aztecs were, how they lived, how they worshiped, and how they built such a vast empire in such a short time.

White, A.
1951 Prehistoric America. New York, Random House.

Chapter 13-21 discusses evidence of man in the New World with various theories as to his origins in the New World.

2. **Teachers' Book**

Collier, J.
1947 Indians of the Americas. New York, Mento Books.

Clark, Grahame
1962 World Prehistory: An Outline. Cambridge, Cambridge University Press.

Howells, William
1963 Back of History. Garden City, Doubleday and Co., Inc.

Kneberg, M., and Thomas M N. Lewis
1958 Tribes That Slumber. Knoxville, The University of Tennessee Press.

Martin, P., G. Quimby, and D. Collier
1947 Indians Before Columbus. Chicago, University Press.

MacGowan, Kenneth and Joseph A. Hester, Jr.
1962 Early Man in the New World. Garden City: Doubleday and Company, Inc.

Spencer, Robert F. and Jesse D. Jennings, et. al.
1965 The Native Americans. New York: Harper and Row.

Wormington, H. M.
1957 Ancient Man in North America (rth ed.). Denver, Museum of Natural History, Popular Series, #4.

3. Subject Area Books

Gates, A., and M. Bartlett
1954 Stories to Enjoy. New York, MacMillan Co., pp. 170-216.

This unit describes early customs of the North American Indians. His ceremonial dress, dances, council, etc. Illustrations. Black and white.

Bolden Book Encyclopedia
Aztecs. New York, Golden Press, Inc.

Pertains to the civilization of the Aztecs in Mexico.

4. Audio Visual Aids

a. Films

Learning About the Past. (Indian University)

Included are the reconstruction of an Indian stockade, and dioramas of selected American Indian cultures.

Indians of California. (Barr Film Company)

California Indian life prior to contact.

Woodland Indians of Early America. (Coronet Films)

Scenes in the eastern and Great Lakes region provide a study of pre-contact Woodland culture.

Prehistoric Farmers. (Nebraska University, Bureau of Audio Visual Instruction)

Primitive Indian social organization is described.

Indians of the Plains: Life in the Past . (A. F. Films)

Stresses the dependence of the Plains Indians upon the American bison for the necessities of life.

Nomad and Indian: Early Man of the Plains. (Nebraska Council for Educational Television)

Includes development of Indians as hunters and foragers to the time of contact.

American Indians Before European Settlement.

Discusses entrance of man into the New World, where he came from, and how he lived.

b. Filmstrips

American Indian Life. (H. H. Wilson)

Shows the dress of the Indians of the Eastern Woodlands, the Plains, and the Pueblos, and describes the ways in which different groups subsisted prior to contact.

The Incas. (Time-Life Series)

Includes detailed photographs of the archeological remains of this rich and complex culture.

Indians. (S.V.E.)

Describes Indian life before settlers came.

How the Indians Lived. (Jam Handy)

Series of five filmstrips describing life among the Indians before the coming of the Europeans.

c. Flat Pictures

America's First Settlers, The Indians. (National Geographic, Vol. 72, November, 1937: 536-596).

Stages of man's coming to the New World.

Indians of our Western Plains. (National Geographic, Vol, 86, July, 1944: 73-108).

Paintings by W. Langdon Kihn showing the Arapahoe, Blackfeet, Caddos, Shoshoni, and Mandan.

Indian Life Before the Colonist. (National Geographic, Vol. 92, July-December, 1947: 359-386)

Shows the culture of the Indians prior to European contact.

CHAPTER III

THE HOPI

A. Introduction

The primary objective of this chapter is to show the Hopi as an example of the continuation into the twentieth century of a way of life classified as Southwest Formative.

The presentation of the material on the Hopi is an ethnographic description, similar to that used in the Grade 1 material for the Arunta and Kazak. The teacher, therefore, will use this material on the Hopi to transmit a knowledge of the way a small group of Indians live in the United States today.

Teaching this unit on the Hopi is accompanied by three difficulties. The purpose is not to just teach about the Hopi way of life today. It is to show how the Hopi represent, as a living model, something of the way the prehistoric Indians of the Formative Stage lived - such as their ancestors, the Anasazi. At the same time, the Hopi is not a museum of past life--it is a culture undergoing many changes as the Hopi come more and more into contact with white ways. The teacher, therefore, must try to communicate the fact that while Hopi culture is basically conservative, it is changing. A Hopi might one day be wearing kachina ceremonial dress and the next day wearing jeans and driving a tractor on a road construction job. However, the traditional life of the farming pueblo living Hopi is bound to the cycle of rain, cultivation, and harvest that his ancestors have been since time immemorial.

B. Word List

aborigional
Anasazi culture
anglos
clan
Clan Mother
extended family
fetish
gift exchange
Hopi
household
intertillage
kachinas
kivas

Jesuit
lineage
matrilineal
matrilocal
mesa
metate
Nine Days Ceremonies
Old Oraibi
pueblo
totem
trade
work party
yucca

C. Objectives and Content

1. The location of the Hopi.

    a. They are Pueblo Indians living in eleven villages in Northern Arizona.

    b. Their homes are built on the spurs of a black mesa.

2. The physical environment of Hopi country.

    a. The physical environment of the country is severe and effects the way of life of the Hopi.

    b. The temperature varies from -9° in winter to well over 98° in the summer.

    c. Rain fall is scanty and usually in the form of thunderstorms of short duration.

3. Hopi history.

    a. The Hopi represent one of the few remaining descendents of the Anasazi culture.

    b. In a great many ways the Hopi culture has not changed since the coming of the Spanish in the 16th century.

    c. Early Spanish contacts were limited and those Hopi who were under Spanish influence were attacked and destroyed in 1700 by the members of the tribe who were anti-Spanish.

    d. In the late 1700's the Hopi faced the threat of marauding Navajo and Apache, and it was not until the 1860's that the latter was put down and white contact began.

    e. In 1874 an agency was set up for the Hopi and in 1882 a reservation was established.

    f. With the introduction of Anglo concepts of education, changes in land tenure, and the introduction of new tools and technology, there was a shift in village population.

    g. After 1920 there was a reform of government policy which ended with the passage of the Indian Reorganization Act in 1934.

4. The material culture of the Hopi.

    a. The major issue leading to the Hopi form of architecture was protection.

b. There are four types of structures found in the Hopi village: the living room, the store room and court, and the ceremonial chamber.

c. Household utensils are largely made from gourds.

d. Almost every house has an oven made from sandstone slabs.

e. Most Hopi dress much as western farmers do, however, a few traces of the traditional pueblo attire may be seen.

5. The economic organization of the Hopi.

a. For the Hopi division of labor is primarily conventional. The men farm, herd, and hunt. They also weave and make moccasins and Kachina dolls. The women care for the household and make pottery and baskets.

b. Ownership of land is divided into three categories: village lands, clan lands, and individual lands.

c. Hopi economic life is closely associated with a fixed calendar, which also serves to determine the dates of religious ceremonies.

d. Selection of the land to be planted depends on its relationship to the summer floods and to the type of soil needed.

f. Tools used in planting include the digging stick, a planting stick, a pusher-hoe, and a rake.

g. Planting begins about the first of May and harvesting takes place in September and October.

h. Corn, beans, squash, and melons are the crops.

i. Sheep and cattle are kept by the Hopi.

j. The Hopi mainly hunt rabbits, eagles, and coyotes.

k. The Hopi have many craft activities including making kachina dolls, weaving, basket making, and pottery making.

l. The unit in the consumption and distribution of goods is the economically self-sufficient family.

m. Goods are distributed through personal and religious ceremonies, gifts and forfeits, and trade.

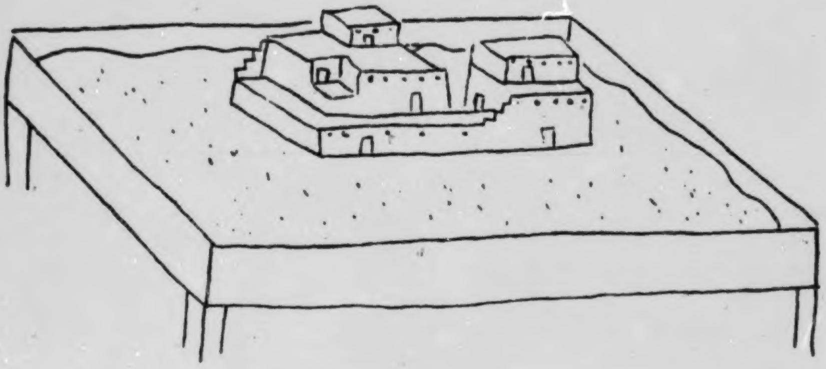
n. Trading is carried out on three levels: intra-village trade; inter-village trade; and trade with other tribes.

6. The Hopi kinship system.
    a. The Hopi kinship system is the most important integrating factor in Hopi society.
    b. Kinship is reckoned along the female line, and is grouped by clan affiliation.
    c. Each clan maintains a close relation to a natural or supernatural phenomenon.
7. Hopi religious beliefs.
    a. The Hopi believe that man must learn his roles in life and his success in life depends on how well he learns these roles.
    b. The control of nature through the use of certain magical ceremonies is very important to the Hopi.
    c. The Hopi ceremonial system follows a fixed calendar.
8. Hopi tribal organization.
    a. Except in times of crisis, political organization is practically non-existent.
    b. Each village has a chief and ceremonial leaders of secret societies.
    c. Matters involving major infractions of the civil code are handled by the Tribal Court.
9. The Hopi provide living materials through which archeologists can check their findings.

D. Activities

1. Activity: Sand table display showing a Hopi dwelling.
    a. Purpose - To help children visualize more clearly the appearance of a Hopi pueblo.
    b. Materials - Sand table, a number of small boxes, paper and paints, and tape.
    c. Procedure - On each box paint a design to represent a dry wall made of stone. Place the boxes together, some on top of the others. Secure them together with tape.

d. Illustration -



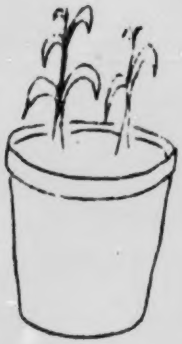
2. Activity: Growing a Corn Plant.

   a. Purpose - To help children realize how the Hopi can grow corn in an area with very little rain.

   b. Materials - Pot, dirt, saucer and grains of corn.

   c. Procedure - Plant the corn in the pot. Place pot with planted corn in a saucer with a little water in it. Put enough water into the saucer every other day to keep soil slightly moist but do not allow to remain soggy.

   d. Illustration -



3. Activity: Writing and Presenting a Play.

    a. Purpose - to help children better understand the daily life of the Hopi.

    b. Materials - Paper and pencil.

    c. Procedure - Together with the rest of the class, write a play about the events in the daily life of the Hopi. Cast the play and present it to another class or interested group.

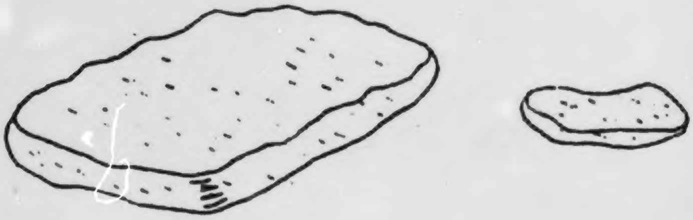
4. Activity: Grinding Corn.

    a. Purpose - To show the children how the Hopi grind corn.

    b. Materials - A large rock with a flat surface, a small rock with a flat surface, and some corn.

    c. Procedure - Place the corn on the large stone and grind it with the small one.

    d. Illustration -



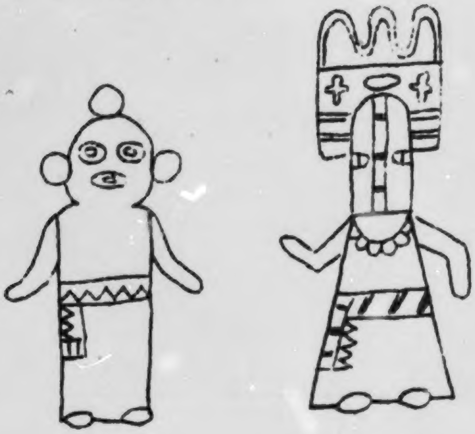
5. Activity: Making Kachina Dolls.

    a. Purpose - To help the children better understand the ceremonial life of the Hopi.

    b. Materials - Toilet paper rolls or cone shaped yarn spools, feathers, construction paper, glue, pencil or crayon.

    c. Procedure - Cut out of construction paper the various appendages desired. Add additional features desired with crayon or pencil. Glue feathers and cut outs onto roll or spool.

d. Illustration -



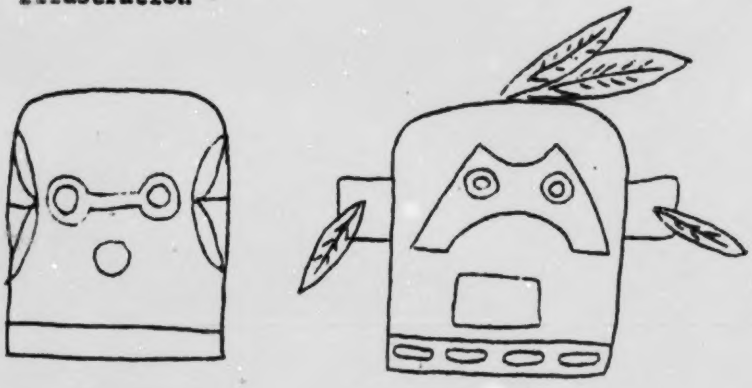
6. Activity: Making Kachina Masks.

   a. Purpose - To help children better understand the ceremonial life of the Hopi.

   b. Materials - Paper bags, construction paper, glue, crayons, pencils or paints, scissors, and feathers if available.

   c. Procedure - Cut out appropriate shaped pieces of construction paper and holes for eyes. Use crayons and pencils or paints for desired elaborations. Glue on feathers and construction paper ornaments.

   d. Illustration -



E. Review Questions

1. Culture is stable yet changing. Explain this statement using specific instances from the Hopi culture.
2. In what ways does the Hopi try to control nature?
3. What is the ultimate unit of production and consumption among the Hopi?
4. What is the most important integrating factor in Hopi society? Explain its operation.
5. How does the physical environment affect Hopi life?

F. Educational Media

1. Children's Books

Baldwin, G.
1963 The Ancient Ones: Basketmakers and Cliff Dwellers.
New York, Norton.

This book presents a discussion of the Indians who lived in the Southwestern region of the United States. Many illustrations pertinent to material.

Bleeker, Sonia
1955 The Pueblo Indians: Farmers of the Rio Grande. New York,
William Morrow and Company.

Description of Pueblo of the Rio Grande River area of New Mexico. It does not include the Hopi, but the way of life has many similarities.

La Farge, O.
1956 A Pictorial History of the American Indian. New York,
Crown Publisher.

Traces the spread of the civilizations of South America and Mexico northward, correcting many misconceptions and reconstructing in great detail the life of the Indians in North America.

Marriott, A.
1952 Indians of the Four Corners. New York, Thomas Crowell.

Tells about the large-walled apartment house 'cities' that were built many years ago (Anasazi): how their culture changed as their weapons changed.

2. Teacher's Books

Thompson, Laura
1950 Culture in Crisis: A Study of the Hopi Indians. New York, Harper and Rowe, Inc.

Thompson, Laura and Alice Joseph
1944 The Hopi Way. Chicago, University of Chicago Press.

Underhill, Ruth M.
1953 Redman's America: A History of Indians in the United States. Chicago, University of Chicago Press.

Waters, Frank
1963 Book of the Hopi. New York, Viking Press.

3. Subject Area Books

Brown, Gertrude Stephens
1965 Your Country and Mine. New York, Ginn and Company, pp. 143-144.

These pages describe briefly life in the pueblos of the Southwest.

Dederick, Nellie, and Josephine MacKenzie
1960 Your People and Mine. New York, Ginn and Company, pp. 136-137.

This section tells of pueblo Indian life and the effect on it of Spanish contact.

Jarolimek, John, John Cutright *et al.*
1961 Living in the United States. New York, MacMillan Company, pp. 6-7.

On these two pages is a short description of the life of the pueblo indians before European contact.

4. Audio Visual Aids

a. Films

Hopi Arts and Crafts. (Coronet)

This film is a study of the Hopi Indians, emphasizing their arts and customs.

Hopi Indians. (Coronet)

Various aspects of Hopi life are shown, such as growing crops and cooking.

Peaceful Ones. (Avalon Daggett Production)

The important areas of the life of the Hopi are covered in this film. Some of the rituals are shown.

b. Flat Pictures

"America's First Painters." National Geographic, Vol. 107, No. 3, (March, 1955) 226-235.

"Everyday Life in Pueblo Bonito." National Geographic, Vol. 48, (September, 1925) 549-596.

"Indian Tribes of Pueblo Sand." National Geographic, Vol. 78, (November, 1940) 549-596.

"Searching for Cliff Dweller's Secrets." National Geographic, Vol. 106, No. 5, (November, 1959), 619-625.

c. Filmstrips

Pueblo Indian: Of the Southwest. (McGraw-Hill)

One of a series of filmstrips picturing the various tribes of American Indians as they once lived and as they live today--their clothes, homes, food, and occupations.

The Aztecs. Jam Handy Organization. Color. Popularized cartoon treatment.

Heritage of the Maya. (World of the Past Series) 44 fr. Life Filmstrips. Color. Accompanying booklet necessary.

The Incas. (World of the Past Series) 66 fr. Life Filmstrips. Color. Accompanying booklet.

The Incas, the Mayas, and the Aztecs. (Indian Cultures of the Americas--American Heritage) 52 fr. Encyclopedia Britannica Films, 1963. Color. Reading script necessary. Excellent pictures; fine example of art work. Technical.

Indians of the Southwest. (Indian Cultures of the Americas) 47 fr. Encyclopedia Britannica Films. Color. Reading script.

Latin America Yesterday and Today. (Indian Civilizations, Part I) Richard Nelson Travel Script. Color. McGraw-Hill.

The Pueblo Indians of the Southwest. (Richard Nelson Travel Strip) 33 fr. Popular Science Publishing Co., Inc., 1953. Good filmstrip on the Hopi.

Southwest Indians (Hopi). Filmstrip #3, How the Indians lived Series. Jam Handy Organization. 40 fr. Color. Artist's conception is generally acceptable, but details such as clothing and architecture are not too accurate.

VOCABULARY (GLOSSARY)

Aboriginal - pertaining to persons native to, or living in, an area at the time of European exploration and settlement.

Absolute dating - a method for dating an object found in an archeological excavation which gives a more or less fixed date.

Anasazi culture - a Navajo word meaning "ancient ones" used for a Basket-maker and Pueblo cultures which began about A.D. 300-500.

Anglo - a European.

Archaic stage - a stage of New World Indian cultural development characterized by total exploitation of the plant and animals available.

Archeology - the branch of anthropology which is concerned with the historical reconstruction of cultures no longer existent.

Artifact - anything produced by human effort.

Atlatl - a spear thrower

*Aztec - a group of Indians living in Tenochtitlan (Mexico City) who developed an urban way of life. Also the empire consisting of a number of city-states paying tribute to Tenochtitlan.

Bering Strait - the narrow body of water separating Siberia and Alaska.

Calendrical dating - an archeological dating system involving the use of dated coins, dated building stones (cornerstones).

Carbon 14 dating - an absolute dating technique based on the amount of disintegration of carbon 14, a radioactive isotope, over a period of time.

Ceremony - a rite or formality; formal procedure.

Chipping station - an area in which prehistoric man manufactured tools.

Clan - a cluster of relatives, claiming descent from one sex line only, who are held together by the belief that they are descended from a common ancestor.

Clan mother - the female head of a Hopi clan.

Classic stage - a stage of New World Indian cultural development characterized by the growth of large ceremonial centers where priest-leaders lived. The villages, however, remained the real population centers. Example: the Maya culture.

Cultural traits - the smallest individual unit of culture. Those traits which can be touched are material traits. Beliefs, attitudes, law, etc., are non-material traits.

Culture - the way of life of a group of people. All the capabilities and habits acquired by man as a member of society are included in his culture.

Dehydration - an abnormal depletion of fluids resulting from deprivation or loss.

Dendrochronology - a method of archeological dating based on the variation in size of a tree's annual rings.

Desert culture - a type of culture in Southwestern United States which emphasized the gathering of wild seeds and the hunting of animals such as deer and rabbits.

Effigies - representations of a person.

Eskimo - a group living in the Artic region who were probably one of the last groups to enter the New World.

Excavation - a hollow formed in the earth, by digging.

Exogamous - pertaining to the practice of a person seeking a mate outside his group.

Extended family - a social group consisting of several related individual families, especially those of a man and his sons, or of a woman and her daughters, residing in a single large dwelling or a cluster of smaller ones.

Extinct - no longer exists.

Fauna - the animal life of a particular period or place.

Fetish - the object or person possessed by spirits that are not their own souls.

Flaked	a stone chipping process where stone chips are removed by directing a blow obliquely near the edge of a piece of material which breaks like a piece of glass.
Fluted	the flaking characteristic of Upper Paleolithic times, in which long, narrow, shallow, parallel-sided flakes were removed.
Formative stage	a stage of New World Indian cultural development characterized by the development of settled village life.
Fossil	any remains or traces of animals which lived in prior periods.
Folsom culture	an early bison hunting culture characterized by their small fluted spear point.
Gift exchange	a transaction involving the giving of a gift for which it is understood that another gift is to be given in return.
Habitation	a dwelling place.
Hopi	a group of Pueblo Indian descendents of the Anasazi culture, living in Northeastern Arizona.
Household	the family and anyone who lives with the family in a single dwelling unit.
Inca	a group of Indians living in Peru known for their well-organized and efficiently-administered empire.
Incised	decorated with figures which are carved or cut into the surface.
Innovation	the process by which new traits are introduced into a culture.
Intertillage	the alternate planting within a row of two or more crops.
Javelins	a spear for thrusting as opposed to one for throwing.
Jesuit	a group of Catholic priests who specialize as teachers and missionaries.
Kivas	large subterranean ceremonial chambers and centers of male activities.

Lineage - a kinship system whose members trace their relationship to a common ancestor through either the male line or the female line of the group.

Maize - a cereal grain. Its grains are produced on the cob in rows. In the New World it is called corn.

Manioc - a plant grown by the Indians of South America. An important derivative of manioc is tapioca.

Matrilocal - the situation in which a newly married couple lives with the family or group of the bride.

Maya - a group of Indians living in Nuclear America whose Priest-leaders made major contributions in the areas of astronomy and mathematics.

Mesa - a landform having a flat top and bounded wholly or in part by steep walls.

Metate - the bottom grinding stone.

Migration - moving from place to place.

Nine Days' Ceremonies - a group of ceremonies of the Hopi.

Nuclear America - the area in which the high point of American prehistoric civilizations developed. It includes Central America, southern North America, and northern and western South America.

Old Oraibi - One of the Hopi pueblos; the oldest inhabited village in the United States.

Organic - pertaining or having to do with living or once-living matter.

Paleo Indian stage - a stage of New World Indian cultural development possessed by the hunters who entered the New World and based on hunting and gathering.

Periphery - the circumference of any curved figure, plane or solid.

Plains Indians - those Indians living on the plains of North America whose culture was oriented around use of the horse. The Plains Indian developed after European contact reintroduced the horse into the Americas.

Post Classic	a stage of cultural development reached by Indians of Nuclear America at the time of European contact. It was characterized by ascendency of militaristic aristocrats, and concern with warfare. Examples: Aztecs and Incas.
Pueblo	an apartment house village of certain southwest Indians built of stone. Also the Indians who live in these structures.
Preservation	the act of keeping or state of being kept from injury or decay.
Primitive	formerly used to designate native or aboriginal groups. Since the term connotes backwardness or inability to accept Western culture, it is seldom used by anthropologists today. Now the term preliterate is used to describe these societies.
Quadrant	the fourth part of a circle, contained within an angle of 90 degrees.
Radioactive	emitting rays of energy or rays of electrified particles.
Relative dating	a method for dating an object found in an archeological excavation which does not give a fixed date but rather tells if the object is older, of the same age, or younger than another.
Salvage archeology	archeology which is designed to save a site from destruction, usually from some man-made endeavor such as a dam or pipe line.
Seriation	arranging artifacts in some sequence.
Site	a location of archeological importance.
Southern cult	the elaborate burial practices and exaggerated religious emphasis on death of the Southeastern Indians in the late prehistoric period.
Stelae	the large stone monuments with picture writing on them which were made by the Mayans.
Strata	beds of earth or rock constituting a layer.
Stratigraphy	the picture of the changing culture content of an archeological site, usually based on the content of its stratification.

Surface collection	-	artifacts which are obtained from the top of the earth at an archeological site.
Technology	-	total of the techniques possessed by members of a society.
Test pits	-	pits which are dug at an/ archeological site to obtain information as to the content of the site as a guide to further excavation.
Tipi	-	a cone shaped tent.
Totem	-	an object, often an animal or plant, held in especial regard by an individual or social group.
Trade	-	a form of exchange wherein the value set on the commodity is determined by bargaining.
Urban	-	pertaining to a city or town.
Woodland culture	-	a type of early formative culture in eastern North America which adopted the village life associated with maize, pottery, weaving and other traits.
Work party	-	a group of workers who came together to perform a given task.
Yucca	-	a plant.

The Development of Man and His Culture:

New World Prehistory

TEACHER BACKGROUND MATERIAL: GRADE TWO

Archeological Methods: Carol E. Austin and Patsy Dudley
New World Prehistory: Harry S. Byars and Kent A. Schneider
The Hopi: Kent A. Schneider

Under the supervision of Wilfrid C. Bailey and Francis J. Clune

Publication No. 29 / Anthropology Curriculum Project
University of Georgia / Athens, Georgia / March, 1966

ARCHEOLOGICAL METHODS

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Teacher Background Material

Grade Two

Experimental Material, 1966
Not for General Classroom Purposes

To be used in connection with "A Sequential Curriculum in Anthropology for Grades 1-7."

The curriculum development reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare, under the provision of the Cooperative Research Program (Contract H-128/OE 4-10-204).

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The Anthropology Project Staff

The Anthropology Project at the University of Georgia is a cooperative project involving anthropologists from the Department of Sociology and Anthropology and a variety of specialists from the College of Education

All members of the staff cooperate in the various phases of material development. Primary responsibility for material development is distributed as follows: anthropological concepts and teacher background material, anthropology; pupil text based on the teacher essays, project coordinator; art supervision, media specialist; teacher and pupil guides, elementary social studies specialist; test construction and validation, educational psychology, critical review, philosophy. Staff associates are assisted in their work by graduate research assistants.

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ARCHEOLOGICAL METHODS

Introduction

Archeology is the division of cultural anthropology that deals with man's past. It is the scientific study of the material remains of past human life and activities--the remnants of the culture of the world's peoples.

Archeology is more than the glory of gold statuettes, elaborate mummy cases, the Rosetta Stone and Pompeii. Archeology is also painstaking research and plain hard work. Furthermore, like all science, it has no geographic boundaries: a Roman coin may hold the key to the dating of an Indian civilization; a Danish artifact could help clarify British prehistory.

Archeological material is important because of the light it sheds on the history of man and on the course of his development. Sir Leonard Woolley says that knowledge gained by scientific archeological methods "affects us all, becomes part of the general intellectual inheritance, and the justification of archeology is that it does in the end concern everyone."

By digging into the past we may be able to better evaluate our own culture and understand how we came to be as we are. The modernity of the elaborate drainage system of Knossus claims our admiration; an ancient grave may yield cosmetics surprisingly contemporary. It has been noted that people react to the sight of a relic in a museum in almost direct proportion to their recognition of its essential modernity.

Although method is necessary, the added ingredients of imagination, enthusiasm, patience, understanding of and sympathy with past cultures are what make an archeologist great. Such a man was Heinrich Schliemann. What he lacked in scientific methodology, he made up in dedication and unswerving belief in the Homeric epics. Troy must have existed. He would prove it. True, he made many errors, but his work at Troy showed that myth can be rooted in fact, and his findings at Mycenae gave a depth to Greek prehistory such as no one had dreamed possible. We can safely term his work monumental.

Until Schliemann dug at Troy and Mycenae, and Sir Arthur Evans at Crete, the real interrelation of archeology, history and prehistory had not been comprehended. Evans brought to light the glittering Minoan civilization--exposed for all to see. Its very existence had not even been suspected, for not a single written word had been found telling us of its past glory.

The history of Egypt has been recovered by archeological work. Today the archeologists working in Europe, China, Central America, and Turkestan are adding to our view of man's past. This knowledge does not result from the fact that ancient objects have been removed from the earth, but because these objects have been removed and interpreted scientifically.

Man has long been interested in digging into the remains of past cultures. Egyptian tombs were broken into and robbed; early Romans dug up Greek artifacts; the conquistadores, searching for gold, plundered Peruvian tombs; older artifacts have been found at American Indian sites--all indications point to their belonging to cultures pre-dating the ones under investigation.

With the Renaissance in Europe came renewed appreciation of the sculptures, pottery, and other objects belonging to the ancient civilizations of Egypt, Italy, and Greece. Private individuals who wanted personal collections encouraged digging. The desire to know more about their ancestors led some Europeans to excavate sites, particularly the plentiful and easily recognized Roman locations.

In the early days of America only a few digs were undertaken. The most remarkable of these was by Thomas Jefferson in 1784. He opened an Indian burial mound near his Virginia home, accurately recorded the position of the strata and their contents, and came to several valid conclusions concerning the function and age of the mound.

But this was the exception. The rule--if and where digging took place--was haphazard, clumsy exploration with material removed from context, hopelessly unidentifiable in many cases. Only in the past hundred years has archeology emerged from the level of treasure hunting and grave-pillaging to one of the recognized sciences.

Field archeology is the use of scientific methods for excavating ancient materials. It assumes that the historical importance of an object depends more on its associations than on its nature or material value. Scientific excavation alone can determine these associations.

The casual digger, and sometimes the thief, are primarily interested only in the commercial or artistic worth of artifacts; the true archeologist values the knowledge associated with the find.

Objects found or stolen out of context can baffle even the expert. If a European farmer digs up a marble statue, sells it, and it passes from hand to hand, eventually ending up in a museum--yet nobody knows where it came from--it may still be a work of art, but its historical value has usually been lost. Scholars must guess its age and its place of origin, using known phases of art for comparison. If the experts do not agree, only confusion will result. Wooley says, "If the finding of an important object be incorrectly reported it becomes a positive stumbling block to science."

General Pitt-Rivers' excavations in Wessex laid the foundations of modern field archeology. He applied the evolutionary doctrine of complex organisms slowly developing from simple forms to the study of the human arts and technology. While tracing the development of the English service rifle, he came to believe that similar principles were relevant to the study of the technologies of mankind.

Lord Carnarvan and Howard Carter demonstrated the value of scientific methods in their uncovering of the tomb of King Tutankhamen in 1922. Their years of planning and research, their painstaking excavations and careful recording methods showed the world that archeology was a scientific discipline with a demanding technique, but one capable of producing stunning results.

The whole world thrilled to their work at the Egyptian tomb, and men began to realize that archeology was a subject of concern to everyone. Man's history in the Valley of the Kings was everyman's history. The golden objects, the articles of fabulous beauty and antiquity, (and some of shoddy workmanship), filled room after room at the Cairo Museum. People everywhere gloried in the discovery.

Archeology would never again belong solely to the wealthy patron and the idealistic searcher and hobbyist. Although scientific methods of digging had been slowly developing, they were known to only a few. Worldwide publicity accompanying this carefully planned excavation of the Tutankhamen burial allowed the fascinated newspaper reader to feel a real participation in the search. He saw that digging was not luck. The years of patient hard work of Carnarvon and Carter were made strikingly clear as new treasures were brought to light by the slow, tedious routines. The long years of excavation and recording actually served to point up the advantage of the scientific method over random digging and tomb robbery: this way both the antiquities and the knowledge were saved for mankind.

How Things Get Buried and Preserved

But people always ask, "Why dig? How did a whole city get buried in the first place? How did the mosaic pavements put down by the Romans come to be twenty-five to thirty feet beneath the streets of London?" We know graves were dug and their contents put there; but houses, streets and cities have not sunk beneath the earth's surface--the earth has risen above them. In fact it is happening all around us today. Wherever a place has been continuously occupied a slow process of buildup has occurred. Long ago, refuse was thrown in the streets; new cobbles were laid over the old rubbish and filth; the street level gradually rose, and one had to step down into the houses on either side. When an old house was torn down and rebuilt, the place would be filled in and the new floor set at or above street level; the first foundation would still remain underneath.

Over the centuries this process has been repeated in many areas of the world. When the huge skyscrapers of today go down into the earth, the workmen cut through layer after layer of a city's growth.

In the Near East the waste accumulates very rapidly. Mud brick is the common building material and walls are made thick. When they collapse they fill the rooms. Hauling away debris is expensive, so the usual procedure is to level the ruins and build on top of the rubble. In Syria and Iraq most villages are built on mounds of their own making; some of the ancient cities rise hundreds of feet above the plain; these cities are composed of superimposed house remains and partly collapsed walls. Such a place is Troy.

What about a Roman camp site? How could this get buried? Nature does it with vines, turf, and the buildup of soil by dust and wind. Centuries of decay and soil formation hide the leavings of the legionnaires.

Volcanic action has very rarely buried buildings, although this affords the best preservation. Woolley says, "It is with a green jealousy that the worker on other sites visits Pompeii and sees the marvellous preservation of its buildings, the houses standing up to the second floor, and the frescoes on the walls, and all the furniture and household objects still in their [illegible] place. . . ."

Destruction of a city by fire or pillage is another way things get buried. Buildings have burned down on top of their contents; victorious armies have forced the defenders to flee, usually before they could gather up their possessions. However, plunderers generally did not take everything; neither did fire always make a clean sweep. Beneath the toppled walls and layer of ashes, much of the original city may remain. The contents may be found burned almost beyond recognition, but even charred fragments can help an archeologist reconstruct the culture.

So we see that things do get buried, and we shall discuss the ways archeologists go about finding out where to dig and how to go about it.

Locating and Surveying the Site

Generally speaking, an archeological site is an area that has been used by man. The terms site location and survey are used somewhat loosely and interchangeably by archeologists. Field survey is sometimes used to connote the generalized activities of site location; it is also used to indicate the preliminary investigation of a site by surface collections or test digs, and to identify the nature of the site. A topographic survey culminates in a precise preliminary map of the site.

Sites are discovered by chance or as the result of field survey. A spectacular chance find resulted when a group of four boys playing near Montignac, France, followed their ball and dog down a hole in the ground and found the famous Upper Paleolithic cave paintings of Lascaux.

London ditchdiggers sometimes have come upon Roman structures, and farmers the world over have unearthed fossils and artifacts. Since the last century, a number of accidental discoveries of sites have been made from airplanes. For example, forgotten Mayan pyramids, deep in jungle territory and all but obscured by vegetation, have occasionally been sighted from the air.

A violent occurence in the form of the demolition of artillery ammunition during World War II opened a cave site near Palermo, Sicily.

Nature helps, too. Long-buried sites can be exposed by erosion. At Olduvai gorge in Kenya, East Africa, some of the earliest physical and cultural remains of man were uncovered by nature. When a water level recedes, occasionally an archeological deposit will come into view. A tidal wave has revealed such a site in the Marquesas Islands.

Although most sites have been discovered by sheer luck, many archeologists first decide what they want to find, and then go about it in a scientific manner. This directed, purposeful search is becoming increasingly important. For example, Eugene DuBois went to Java for the specific purpose of locating an early man site, and he found Java Man.

Knowledge of the habits and preferences of the group he is investigating may suggest to the archeologist where to look. Occasionally maps show the location of mounds or village sites. Local residents often know where someone has found pottery, arrowheads, or other artifacts. A regional nickname or some distinctive geographical feature may give a clue to its former use and users.

After the site has been located, certain steps are necessary before an archeologist can begin work. A field excavation will be planned, and it usually requires additional research. This may involve a thorough study of all documents, legends, and reports of finds of other archeologists working in similar areas.

In any event, permission of the owner must be obtained before a search is begun. A formal permit from the government may be necessary; many countries have strict laws regulating archeological work, especially the removal of artifacts from the country. Sometimes governmental supervision is required before a field survey can be made.

Three main factors influence the method chosen for a survey and the manner in which it can be carried out: (1) the resources of excavation; time, labor, and materials available; (2) the kind of site being sought; (3) the vegetation and other natural environment of the area.

An example will show how these factors can affect a survey. Betty J. Meggars and Clifford Evans, searching for sites in British Guiana, were unable to finish their work during the dry season. There were few men for hire in the thinly populated area; neither could men, materials, or food be imported because of poor transportational facilities. In fact, the archeologists themselves traveled largely on foot, with some relief from truck, tractor, bullock cart, and dugout boats. They hung their hammocks in abandoned thatched huts, cattle outstations, or occasionally in the house of a resident priest. Corned beef, rice, and army C-rations were their staple food, unless some friendly rancher invited them for a meal. A small kerosene primus stove was used for cooking.

The jungle of tightly interwoven growth made travel difficult and hampered excavation. In the rainy season, rain and humidity not only made field work unpleasant, but threatened to ruin sample specimens and equipment. The archeologists found that most of the sites contained few artifacts because vegetative matter and bone were destroyed by the moist conditions; usually only a few stone objects and soil discolorations remained--difficult to locate and identify.

However, under these trying conditions they managed to find guides and continued with the survey until thirty sites were investigated.

Aerial photography is a valuable survey tool because topographical features are often more easily recognized from a distance. Soil color variations and changes in either the type of plant material or plant growth rate may suggest human alteration of the soil. Buried walls can limit the percolation of water and cause a less well-developed crop. The digging of a grave causes soil to be deeply mixed; a different vegetation or a more luxuriant growth may occur above the grave. If vegetational cover is absent, the burial sometimes will have a soil color different from its surroundings.

All of these surface signs can help to guide the digger, and in many cases such features are apparent only from the air.

Occasionally, preliminary surveying by car is effective--especially in the case of large mounds--but less impressive sites nearly always call for a systematic search on foot. In fact, all sites are finally inspected in this way: the party usually forms a line, walks slowly across the area, and records any artifacts or unnatural characteristics of the landscape. Surface collections are then made and identifying photographs taken.

Once a site is located, it need not always be worked immediately. Sites that are in the paths of proposed roads, bridges or dams are usually given priority over others. This salvage archeology must often be carried out rapidly; sometimes only a portion of the site can be examined in the alloted time.

Types of Sites

Sites are classified according to *location*, *use*, or *historical context*.

Site Locations. Site locations are designated by terms that include: caves, frozen sites, desert sites, underwater locations, jungle sites, and open areas. Preservation varies with the type of site and with the local conditions. Few bones or vegetable remains can last unless the area is very dry. For example, in the damp southeastern part of the United States, only pottery, stone, and a little bone are customarily found. However, in the southwestern United States and other dry areas of the world, not only pottery, stone, and bone, but other, more perishable organic materials often remain.

Cave sites provide somewhat better-than-average chances for preservation. Lovelock Cave, Nevada, is an example of a dry cave site. Among the items that have been recovered there and from similarly favorable dry locations are: yarn, textiles, dried fishes, seeds, string, snares, sandals, matting, cane arrows, bone awls, obsidian arrow points, shell beads, and digging sticks. Excavation of Belt Cave in Iran has produced pottery, flint blades and scrapers, a human skeleton, and the bones of ox, pig, sheep, goat, and gazelle.

Deposits found in wet caves and those under rock shelters usually have suffered from water damage, and the finds are limited.

Continually *frozen sites*, while rare, offer excellent preservation. In the Altai Mountains of Russia, the tomb of a nomadic chief was found frozen as a solid block of ice. The tomb was "excavated" by pouring boiling water on the ice. Besides the tattooed body of the chief and women in log coffins, there were: carpets, embroideries, appliqued felt, wood carvings, a cart and a yoke for oxen. In addition, the workers found ten yellow mares with perfectly preserved skin, hair, and muscles; their saddles and trappings were intact, and their entrails even contained undigested food. The scientists thought that valuable objects of gold and silver probably had been buried with the chief, but all signs pointed to the entrance of grave robbers shortly after burial, allowing the tomb to fill with water and freeze.

In arctic North America where permafrost is present, early Indian sites have been explored by removing the melted top layer and letting the frozen ground beneath it melt. The exposed portion is excavated as soon as it softens. Preservation under these conditions can be very good if newly thawed material is removed before decay takes place. In such sites baleen knives, wooden buckets, kayaks, boats, harpoons, arrow tips, arrow shafts, feathers, and shells have been uncovered.

Desert sites, whether located in open areas or caves, afford good preservation. Natural desiccation (drying) takes place, and the lack of moisture prevents decay. Some of the best preserved artifacts have come from desert sites: Egyptian tombs, like that of Tutankhamen, Basketmaker Caves in the southwestern United States, those in Inner Asia, such as the Khotan settlement and the documents at Niya--all have proved important finds. Many burials along the arid coast of central and southern Peru have yielded organic materials; in some cases it has been possible to study details of clothing and even intricacies of hair style.

Underwater sites, including bogs, vary in preservation qualities according to the oxygen content of the water and other local conditions. Some good preservations have been found in English peat bogs; others have been retrieved in the Alpine lakes region. By examining surviving organic materials from the ancient lakes, searchers have learned much about Neolithic and Bronze Age men. Bones have lasted, and many vegetable remains, including wood objects, basketry, linen textiles, and food have been recovered. Scientists were able to reconstruct the life of the Star Carr people who lived in Yorkshire, England, 9,000 to 10,000 years ago on the edge of an old lake bed, which is now a bog. Quantities of various animal bones, as well as horn, stone, and wooden objects, remained to tell us about the culture of these early people.

In a sacrificial area in Yucatan, incense, human skeletons, and hundreds of smaller articles were discovered at the bottom of a well. Bits of fabric, darts and dart throwers were brought up; workers also found numerous symbolic figures carved out of jade or beaten on copper or gold.

Occasionally an ancient sunken ship will be sighted by a sponge diver or other underwater explorer. One such ship was discovered in a tell (mound) in the Mediterranean Sea. Inside the mound was the vessel, which had set sail in 200 B. C., carrying pottery, statuary of marble and bronze, and even some unfinished columns. The fine mud that enveloped the boat acted as a preservative.

Aqualung skin diving, especially the improved technique of the past few decades, has extended the scope of underwater archeological exploration.

Jungle sites and tropical rain forests offer very poor preservation because of the heavy precipitation and active vegetational growth. Under these conditions, wood and vegetable matter decay; secondary growth invades the site in about five years; bone material disintegrates, and only a few pottery fragments and stone objects survive. Many of the Mayan and Cambodian stone edifices have even been torn apart by root growth.

Function or Use. Sites are also classified according to their functions, or the uses to which they were put. They can generally be categorized as follows: Habitations, ceremonial sites, burial sites, quarries, painting sites, animal killing sites, and stone chipping stations. But some sites show evidence of having served more than one function; the true nature of a multi-purpose site usually cannot be determined until the objects have been recovered and analyzed.

A place where people once lived is called a habitation site. These may be found in any climatic locality, in caves, in open areas, river bottoms, or mountain valleys. One of the most famous habitation sites in the Old World is the amazingly well-preserved city of Pompeii. In A. D. 79 the city was buried by the eruption of Mount Vesuvius, and was not unearthed until the eighteenth century; archeologists have uncovered baths, taverns, and private dwellings complete with their contents. The work on Pompeii is still in progress.

Other well-known Old World habitation sites are Herculaneum (also buried by Vesuvius), Jericho, Knossos, Mycenae, Troy, Babylon, and Ur--each of them a colorful chapter in archeology.

New World habitation sites include Pueblo communities and Maya, Inca, and Aztec cities. Innumerable camp sites of various ages cvvur in most countries, and the greater number of them remain undiscovered or unexcavated.

Some areas or buildings served only ceremonial functions. Certain Greek temples immediately come to mind, but Rock Eagle, Georgia, also falls into this category. Rock Eagle is literally a pile of rocks in the shape of an eagle, and the local Indians used it for ceremonial purposes.

Much of the most informative archeological material comes from burial sites. The practice of burial was probably first begun in the Middle Paleolithic. Burials are composite (many individuals) or single; they range all the way from a shallow hole to the elaborate Egyptian tombs.

Many Viking burials have come to light. Early in this century the hermetically sealed burial tumulus (mound) of a Viking queen was discovered at Oseberg, Norway. Its date was placed at A. D. 850: The equipment of this tomb is in striking contrast to other plain monuments in its district. By digging down into the burial ship that held the body of the queen and a companion, excavators found fragments of a wide assortment of objects: furniture, utensils, ornaments, a carriage, sledges, horses, dogs, and tent frames. Some of the grave goods had been crushed as a result of the gradual settling of the mound; extensive restoration and elaborate preservation of most of the objects was necessary, not only to prevent disintegration on frying out in the air, but because the damage to the material over the centuries had been so great.

One of the functions of the Indian mounds in the southeastern United States was burial. As was the case of the Virginia mound excavated by Thomas Jefferson, such structures were built up in layers over long periods of time. Bones of the dead were periodically gathered up and placed on top of the elevation; another layer of dirt was added over the bones; the process was repeated over the centuries. Sometimes these burial mounds rose to heights of more than fifty feet; they were usually crowned with a temple, which could be approached by a broad ramp of log or earthen steps.

There are many Indian mounds of different shapes throughout the southeastern United States and the Mississippi Valley; some are shaped like animals, others like circles or squares. Usually, such structures functioned as both burial and ceremonial sites.

Quarry sites are usually found where outcroppings of suitable types of rock occurred. Archeologists look for stone chipping stations in the general vicinity of the quarry. However, it is rare for either of these two sites to furnish enough of interest to make excavation worth while. Likewise, animal kill sites produce only scant information other than the type of animals sought, possibly the method of hunting and butchering, and the weapons that were used.

Several paleolithic painting sites have been discovered in the limestone caves of France and Spain (Lascaux, Trois Freres, Altamira, La Mouthe, Tuc d'Audoubert). Here paleolithic man painted and engraved images of the animals that he hunted. Three schoolboys discovered two of the above caves. Floating up a subterranean river, which they had previously explored with their father, they chanced upon drawings of bison, reindeer and horses, as well as a pair of clay bison statues. Two years later the same three boys descended a natural well and found paintings in another cave which is named for them, Trois Freres (Three Brothers).

Such cave pictures are most often located in dark recesses where early men would have needed artificial light. The paintings are often placed on inaccessible areas of the walls. Animals are the dominant motif. Spears are often depicted, but very few men are included. Scientists have deduced from the position of the paintings and the subjects drawn that the paintings may have been part of a magic ceremony or religious belief of these early men.

Painting sites in the southwestern United States show a variety of animals such as mountain sheep and antelope.

Historical Context. In purely prehistoric sites there is no written record left by the people in question or by others who were in contact with them. The only source of data is the site itself. However, history may be an important adjunct to the information found or inferred during the excavation of later or historic sites.

Historic sites fall into three broad classes: Ancient historical sites, contact sites, and Modern Western European sites. Ancient historical sites were inhabited by people who possessed a system of writing and left written records. These records are often highly useful for dating and evaluating excavated material. The Egyptians, Aztecs and Romans were among the peoples who had writing and record systems.

Sometimes archeologists are seeking to add to what is found in known historical accounts. The digs at Jamestown, Williamsburg, and Fort Frederica are cases in point. So were Schliemann's attempts to verify the historical and legendary accounts of Troy.

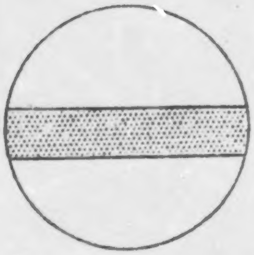
In the past, classical archeology has dealt primarily with the early Mediterranean higher civilizations that used writing systems. Lacking writing, the people who lived in contact sites could leave no written records of their own. Therefore, to interpret their customs the scholars and scientists are largely dependent upon the written records of the groups with whom such people associated: the Romans reported much about the ancient Gauls; early Spanish documents from the New World sometimes shed light on archeological finds. Finally, the presence of certain trade goods may point to contact with the inhabitants of a site.

The Excavation

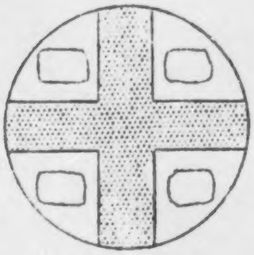
Some general procedures are followed in all scientifically conducted excavations: the area of the dig is kept neat and orderly; data pegs and reference strings accurately outline the areas that are to be excavated, thus providing ready reference points for the plotting of horizontal and vertical positions of all the artifacts that are recovered.

Wherever feasible, the walls of the dig will be vertical. In areas having sandy soil or heavy rainfall, the walls are usually stepped (like stair steps) to avoid cave-ins.

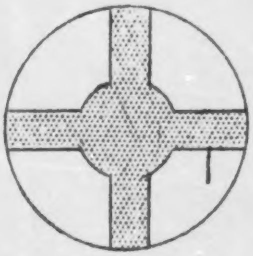
Methods. Usual methods of excavation include trenching, digging a pit or system of pits, working one or more quadrants, a combination of these methods, or total excavation. The trenching method is usually employed when deposits are very deep, if determination of the stratigraphy (sequence of strata) is the primary objective, or if the time is limited. Experts disagree concerning how representative a trench may be, for it is true that with this method an important area of the site could be missed completely. However, by increasing the number of trenches and adding several test pits the archeologist will lessen his chances of overlooking important information. When a specific area of similar sites is known to contain valuable material, this area is customarily excavated at the same time.



Simple trench.

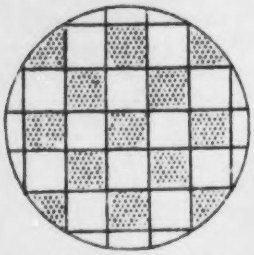


Trenches and pits.

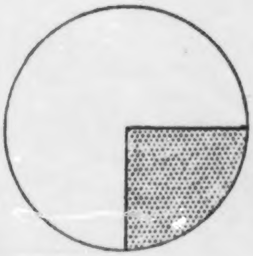


Trenches and center.

A checkerboard system of pits is sometimes used to work a shallow site. The entire area is laid off into five- or ten-foot squares. Alternate squares are then excavated. This method decreases the chance of missing larger important areas, because more squares may be dug if part of an important find is discovered. While this method gives a more representative sample, it is also more time-consuming than trenching.

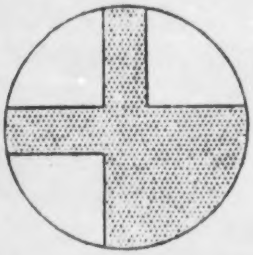


Checkerboard
of pits.

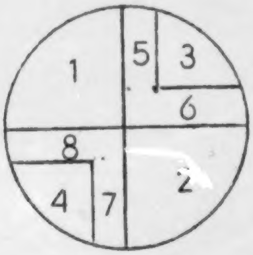


Quadrant.

Another method involves the excavation of a quadrant (one-fourth) of the area. A quadrant is thought to provide an average sample. Other quadrants may also be excavated, and trenches may be added to the quadrant for more complete coverage.



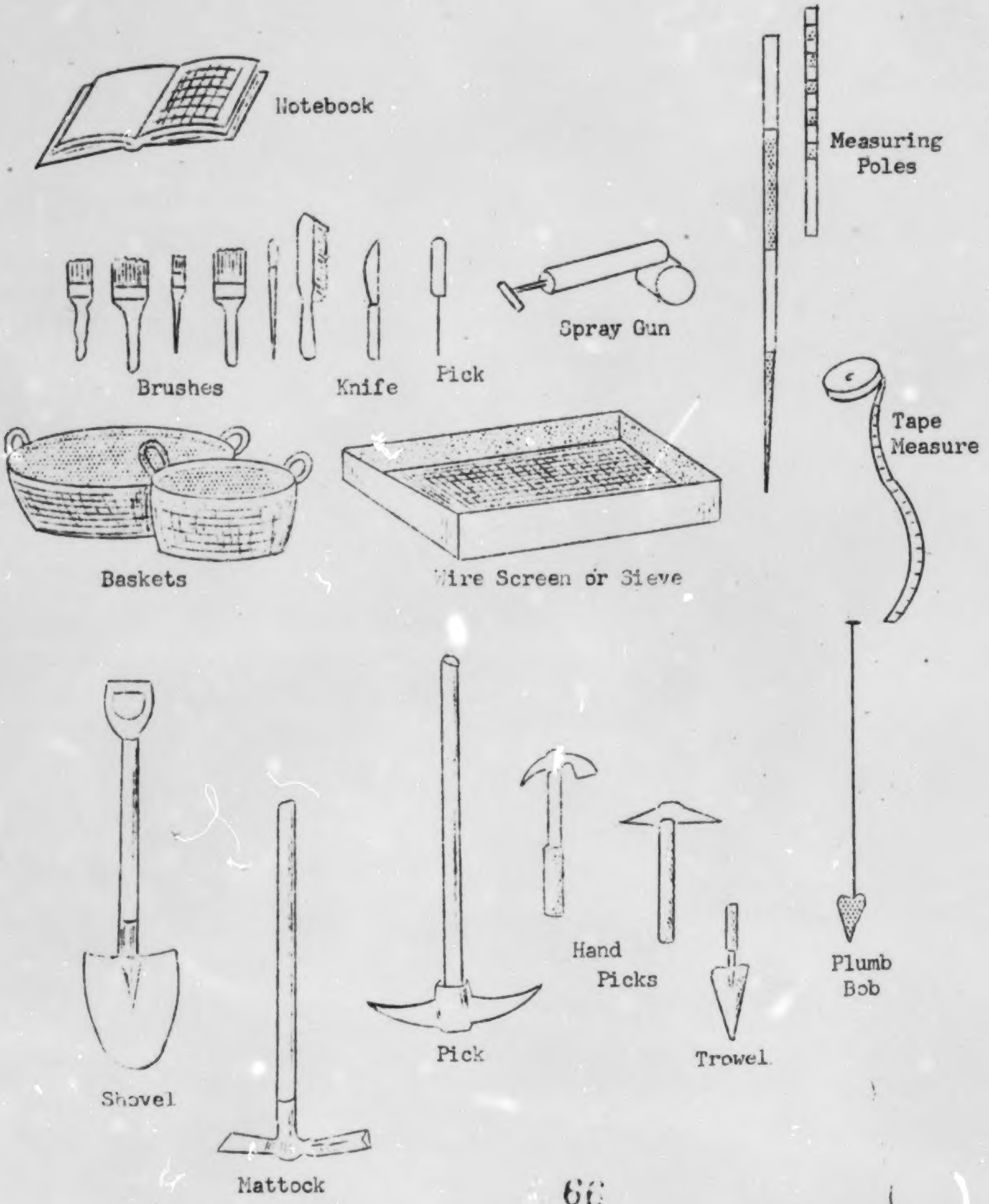
Quadrant and
trenches.



Total excavation showing
parts removed beginning
with number 1.

Total excavation of a site provides the most complete record. This technique is usually recommended for the unusual site containing many artifacts; however, some authorities question the advisability of total excavation of rare and unusual sites. They point out that with the advances in the means of dating materials and with the ever improving techniques of excavation, a more complete evaluation might be done at some future date.

TOOLS USED FOR EXCAVATING


Notebook
Measuring Poles
Spray Gun
Brushes
Knife
Pick
Tape Measure
Baskets
Wire Screen or Sieve
Hand Picks
Plumb Bob
Pick
Trowel
Shovel
Mattock

Tools. Broadly speaking, an archeologist's tools are any implements that seem to do the job. Bulldozers have been used to remove unwanted dirt from the tops of deeply buried sites. Picks, shovels, and mattocks are employed where more care is needed, and trowels (brick laying type) are useful for finer work.

Removal of dirt from within the site requires much care to prevent the loss or disruption of valuable objects. Wheelbarrows are useful for carrying the dirt from the site to a place where it can be sifted and subsequently dumped. In some parts of the world, such as India, the workers use baskets for hauling the dirt; baskets are sometimes easier to obtain and some workers prefer them. A set of screens is necessary to break up the dirt for inspection; the dirt is screened through finer and finer meshes before it is finally discarded. Though this is one of the dirtier jobs at a dig, it is nonetheless important. Occasionally a small object, otherwise overlooked, will be the key to correlating strata in different sites.

For finer work, an array of miscellaneous implements--tongue depressers, dentists' probes, ice picks, paint brushes, whisk brushes, and insect spray guns--are used to remove dirt next to a valuable artifact. Tape measures and surveying instruments are necessary because the removal of an object from a site without knowing exactly where it came from can render it useless. Notebook and pencil for record keeping are most important and a camera can be of great help at all stages of the work. Important features are nearly always photographed as soon as they are uncovered because a sudden rain or cave-in could result in the loss of excellent detail.

Personnel. The personnel of a scientifically planned excavation includes at least one archeologist who is familiar with the type of work being undertaken. Trained diggers are needed. Because of their experience they will notice features sometimes overlooked. A few expert diggers can even tell whether their shovels are striking an object of fired clay, bone, or stone. Whenever something is hit, a skilled digger will call the archeologist. Further excavation then proceeds by more delicate and careful means.

Wages paid diggers vary with the country or state in which the site is located and with the type of material being found. Where gold and silver coins or artifacts are present, either a close watch by a supervisor, or a bonus system will be employed. If they have the opportunity, unscrupulous private collectors will try to buy interesting bowls, figures, paintings and the like from workmen. In some countries, India, for example, groups of people have been associated with digs for such a long period of time that the digger occupation is even established in the family. Throughout most of the world, though, workers have to be trained on the spot.

Records. Clear valid information can be obtained only if the excavation is neat and the records are systematic and detailed. The records consist of sketches, photographs, maps, field notes, and sample artifacts.

It is important that the exact, measured position (horizontal and vertical) where an artifact is found be recorded. For cataloging purposes, each artifact will be given a letter-number combination which designates its location. This identification is entered in the field notebook and printed on the artifact with an appropriate ink. The labeled artifact is then stored, either at the dig or at the operations headquarters, to await further examination.

As the dig progresses, all changes or variations in soil texture, content or color are listed in detail; a slight soil color variation may be the only remains of a former artifact. The object has decayed but a mold filled with a different kind of soil, or soil discoloration, may outline the original form. These vague and tenuous indications of sites or objects are often referred to as "ghost" sites, or "ghost" objects. If the signs are read properly, certain accurate deductions can be made from the circumstantial evidence of the destroyed site or object. Keen perceptivity and extreme patience on the part of the excavator are the qualities that must enter into this kind of detective work.

Old World "ghost" sites include a Bronze Age skeleton from Holland and post holes of an early Iron Age house in Jutland, both of which appeared only as soil discolorations. The identity of an Anglo-Saxon ship, Sutton-Hoo, found at Suffolk, England, was deduced from the placement of the iron spikes. Pompeii is another example: the bodies of the Pompeiians were covered with ash; rain or condensed steam turned the ash to mud which hardened around the bodies. Disintegration of the bodies left hollow molds of the victims' final postures. Excavators, by pouring plaster into these molds, can reconstruct lifelike replicas.

New World "ghost" sites include post holes of Indian houses found at Etowah Mound in Georgia and a burial at La Venta, Mexico--both evident only from soil discolorations.

Photographs of exposed artifacts in context, and photographs of the excavation itself, are invaluable for a clear record of the work. To obtain this documentary evidence, the area being photographed is prepared beforehand by the removal of all loose dirt from sides and walls of the dig. Strata differentiation can be accentuated by roughing areas of textural differences or by applying water mist to highlight certain changes. Natural shadows sometimes help. All such photographs need a scale; a measuring stick marked in one-foot lengths, or a person standing nearby offer good comparison. Labels identifying what has been photographed are a necessity.

Data for map-making is usually gathered, with natural topographic contours plotted on one map and exact locations of all excavated areas marked on another.

The amount of detail recorded will depend both on the archeologist and on the type of site. It is far better to have too much information than too little. Observations seemingly unimportant at the time of excavation may later prove to be the key to an unresolved problem.

Completion. After the work of digging and recording is completed, refilling the excavation may be necessary. Property owners usually stipulate such refilling as a prerequisite for permission to dig. The dirt is replaced with shovels or by any other convenient method. As a courtesy to future archeologists, recently dated coins (pennies) or other objects are usually mixed into the fill to indicate that excavation has taken place.

The owners of the multiple mound site at Etowah, Georgia required that the excavators restore the mounds to their original shape when the digging is completed. (Work is still in progress.)

Dating Methods

The age of an object or of a site is a primary question for the archeologist. There are two major categories of dating methods, relative and absolute. *Relative dating* methods do not specify which year, but indicate whether an object or site is older, of the same age, or more recent than another. *Absolute dating* methods give a more or less fixed year, such as A.D. 1000. A relative date sometimes leads to an absolute date.

Relative. Relative dating methods include *stratigraphy*, *seriation*, use of past *flora* and *fauna*, and *geologic relationships*. Although relative dating methods provide less precise dates, they can be of great value: the *stratigraphic position* of an object may tell its age in relation to objects in other strata. The upper strata in a stratigraphic series are considered later than lower strata. Care must be exercised, however, to recognize bones or objects that may have been buried from a higher level. In the Sandia Cave excavation mentioned earlier, the Folsom Culture, because of its higher stratigraphic position, is thought to be more recent than the Sandia Culture material; the amount of time which elapsed between the two levels cannot be definitely measured. In the Belt Cave excavation, also named above, the number and percentages of various animal bones in the different layers indicated the climate at that time as well as food preferences of Belt Cave's occupants.

A systematic change in forms of arrowheads, pottery, and other items has been described in many areas. *Seriation* involves recognizing that a particular artifact fits in a certain place within an established sequence, organized on the basis of variations in color, size, or shape. New excavation sites often can be given a relative date by matching fragments of pottery found with a known sequence for the area. For example, the following pottery sequence is found in Northeastern Arizona:

Culture	Approximate dates	Name	Description
Pueblo IV	A.D. 1300-1700	Fourmile Polychrome	Black and white design inside and outside on red clay bowl.
Late Pueblo III	about A.D. 1200	Pinedale Polychrome	Black inside, black and white outside design on red clay bowl.
Early Pueblo III	about A.D. 1100	Saint John's Polychrome	Black inside, and white outside design on red clay bowl.
Late Pueblo II	about A.D. 1000	Wingate Black and Red	Black on inside of a red clay bowl.

In most cases, pottery types and styles show development from the simple to the more complex. However, the possibility of a deterioration of techniques and elaboration must always be considered. There are the further possibilities that some groups used two or more different pottery types at the same time, or that two entirely different groups used the same type of pottery at widely spaced intervals.

In time, the plant and animal life within a particular area change. If the archeologist is familiar with the plant and animal history of that area, the discovery of animal bones or plant remains at a site may offer a clue to its age. One of the early man sites in the southwestern United States was discovered when a cowboy saw large bones protruding from an arroyo (gully) near Folsom, New Mexico. The bones proved to belong to a bison-like animal, extinct since the last Ice Age. The spear points and the man who made them are now known as Folsom points and Folsom man, respectively. Fauna differences in the Mount Carmel caves of Palestine provide valuable insight into Pleistocene climate of that area. The gazelle, a steppe animal, and the fallow deer, a woodland animal, were found in different strata of the cave.

Knowledge of the geologic history of a region can be helpful to the archeologist. Dates of habitation sites can often be determined by correlation with the known dates of fluctuations in sea level, disappearance of lakes or swamps, periods of volcanic activity, and other geologic events. Recognition of these features in buried strata also helps the scientist to understand how the people lived, even though the present surface environment of the site may be much different. The migrations of prehistoric people were more easily traced when features belonging to glacial and interglacial stages were understood. During the glacial periods, the climate became colder. With tremendous amounts of ice covering a large area, the sea level became from 300 to 600 feet lower, exposing areas which are now covered by water.

Absolute. Absolute dating methods include calendrical dating, dendrochronology, potassium-argon dating, and the very important Carbon 14 dating.

The calendrical dating system involves the used of dated coins, dated building corner stones, or articles known to have been available for only a brief period of time. Some difficulty may arise in correlating these dates with dates on our calendrical system. Many Mayan buildings have dates inscribed on them, yet we are uncertain exactly when they were built according to our calendar. Ancient Roman coins are often dated, as are many Egyptian, Roman, and Greek edifices.

Dendrochronology, or tree ring dating, can be applied to certain types of wood or charcoal. Dendrochronology is based on the variation in size of a tree's annual rings; this is caused by climatic variations such as wet and dry seasons or length of the growing season. A tree from the Southwest can be dated if it has lived in a marginal area away from a constant source of water. By comparing the rings with an established sequence of dated rings, the date of the specimen can be determined.

Tree ring sequences are being developed for other areas of the world, but at present dendrochronology is particularly useful in the southwestern United States where the sequence extends back as far as 3,200 years. However, the poles used as rafters in puebloes can date only when the tree lived, and may or may not date the site in which they were found, because older wood was often salvaged for later construction.

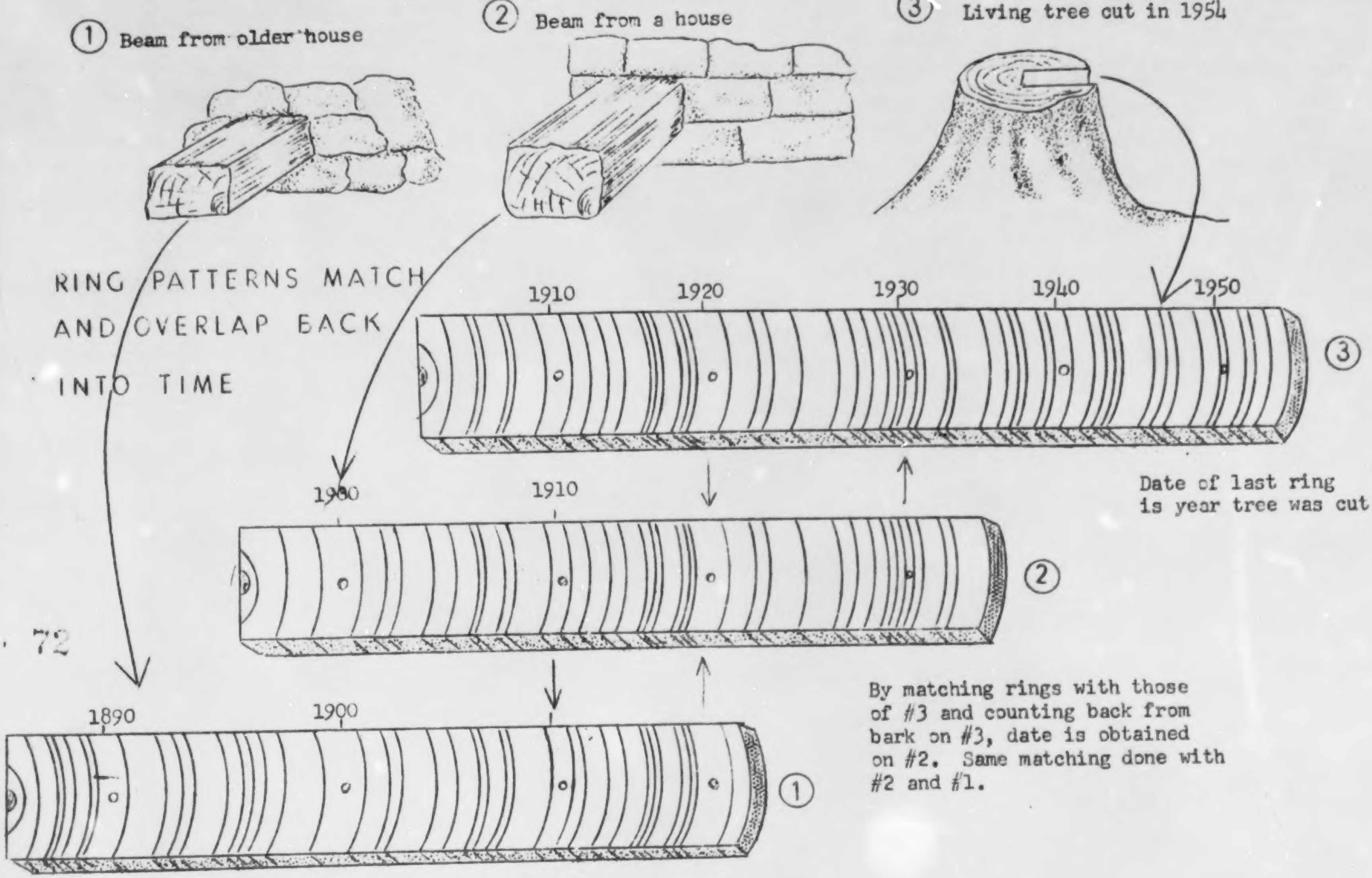
The potassium-argon dating technique can be applied to very old deposits that contain potassium. Over millions of years, potassium decays into argon at a regular rate. By measuring the amount of potassium and argon present, the age of a rock can sometimes be determined. A major difficulty with the method is that it cannot be applied to rocks less than about a million years old.

Recently, the Australopithecus find discovered in Africa by L. S. B. Leakey has been dated at approximately 1,750,000 B. C. by the potassium-argon method.

Carbon 14 is by far the most widely used absolute dating method in the field of archeology. It can be applied to any organic material in sufficient quantity for analysis. Carbon 14 is a radioactive isotope of carbon. This isotope, along with regular carbon, is taken in by plants and animals during their life. When a plant or animal dies, the radioactive carbon is no longer replenished and it disintegrates at a constant rate, one-half the quantity about every 5730 ± 40 years. The radioactivity of a sample becomes weaker and weaker as time passes; and after about 60,000 to 70,000 years, the amount of radioactivity is too small to measure--thus, samples older than this cannot be dated. All Carbon 14 dates are followed by a "plus or minus" figure to allow for inherent error in the technique. This error of measurement generally increases with the age of the article.

In 1965, twenty-eight institutions in the United States and thirty-eight institutions outside the United States had the equipment, the trained

DENDROCHRONOLOGY - TREE RING DATING


① Beam from older house
② Beam from a house
③ Living tree cut in 1954
1910
1920
1930
1940
1950
③
1900
1910
②
1890
1900
①

RING PATTERNS MATCH AND OVERLAP BACK INTO TIME

Date of last ring
is year tree was cut

By matching rings with those
of #3 and counting back from
bark on #3, date is obtained
on #2. Same matching done with
#2 and #1.

personnel, and were actively engaged in Carbon 14 analysis. The dates of all samples so evaluated are published in a yearly volume called Radiocarbon. The ages of thousands of specimens from the United States along have been determined. Sandals found in a cave near Newberry Crater, Oregon, have been dated at about 7,000 years B. C. Charred sheep dung and charcoal from fire pits in Danger Cave, Oregon, date about 9,000 B. C. A barbecue pit and roasted animal food found in Russell Cave, Alabama, were used 9,000 years ago according to Carbon 14 analysis. In the Old World, charcoal found in a barbecue pit in Lascaux Cave proved it was in use 15,000 years ago. Stonehenge, in England, has been dated from 3,500-year-old charcoal samples found in a pit. Carbon 14 tests run on the linen in which the Dead Sea scrolls were wrapped dated it as being about A. D. 40.

Laboratory Investigation

If a sufficiently large crew is available, laboratory work may be carried out simultaneously with excavation; artifacts are immediately sent to the laboratory where they are cleaned, treated with preservatives and restored. Trained personnel frequently perform near-miracles of restoration: a Saxon helmet can emerge from scores of small fragments of decayed metal; hundreds of tiny wooden pieces could add up to a shield; a vase may grow out of bits of pottery; even a harp has been reconstructed when only the string nails and a slight soil discoloration remained.

Timing is important in this kind of laboratory work. Wood, bone, and many other substances usually need to be treated immediately after excavation so they will not shrink or disintegrate. Glycerin, formalin, creosote, alum, sterile water, or linseed oil with carbolineum, may help preserve damp or wet wooden objects. Bones are sometimes treated with diluted polyvinyl acetate, methylated spirits, diluted shellac, or other preservatives.

Frequently, much of the evaluation and interpretation of the finds must be left for a later time. For every one week spent in the field, about six weeks must be spent in evaluating, interpreting and preparing the material for publication.

Interpretation of all the assembled date is the archeologist's most difficult but important task. Even the smallest recorded detail could prove invaluable. In most instances, only a limited part of the culture will ever be known. However, some culture traits can be inferred from the excavated material. If quantities of broken pottery are found, the group had pottery. It is between these two extremes--few details or many--that the archeologist's training is most valuable. It enables him to recognize subtle bits of evidence; from them the economic structure, social organization, and many other aspects of a culture can sometimes be reconstructed.

The archeologist must begin his interpretation with the artifacts that have been recovered, and climate, both present and past, has a great influence on the type of artifacts that have lasted. Moist warm climates increase bacterial action, foliage growth and leaching of the soil. Cold dry climates tend to hinder disintegration. The kind of material of which the artifact was originally fashioned will also influence its chances of preservation. Textiles and woven articles disintegrate rapidly; so do most wood and iron objects. On the other hand, stone, glass, and gold objects, because of their durable qualities, are often preserved. It is no coincidence that stone tools are the basis and primary source of the "traditions" of the Lower, Middle, and Upper Stone Age.

Complete interpretation of the excavation data involves (1) placing the site in time, (2) evaluating it in relation to other sites and cultures, (3) describing the life of the people.

Historical placement of the site can usually be done by one or more of the dating methods. The establishment of relationships to other cultural groups is often more tenuous, but can sometimes be done. For example, molded copper bells have been found among the early Indians of Arizona although these Indians had no knowledge of the smelting process. Metallurgical analysis showed that they were smelted in Mexico. The archeologist might therefore deduce that primary (direct) or secondary (indirect) contact was maintained between these two groups, and the bells in question were probably acquired by trade. In such instances, similarities of style as well as geographic proximity must be considered. Similar copper bells might even be common in Inner China, but a competent archeologist would be highly skeptical of the suggestion of cultural contact of the early Arizona Indians with Inner China.

If a specific excavation does not clearly place the site in time and clarify its relation to other cultures, future discoveries, coupled with present knowledge, may supply the missing pieces.

The second primary task, and most important goal of interpretation, is to describe the life of the people. Knowledge of the implements used by inhabitants provides information about economic activities; For instance, a great number of grinding stones were excavated at Mesa Verde, Colorado, and Jarmo, Iraq; the people were assumed to have relied heavily on grain crops. The absence of large quantities of animal bones would also substantiate such a reconstruction.

Close analysis of animal bones may make possible the differentiation of wild and domestic animals. Thus, whether a group were hunters or herders can often be learned. The size of a group, length of occupancy of a site, and population changes may also be approximated, by using data such as size of the camping area, number of burials, such ecological factors as the number and type of plants and animals, and climate. An extensive knowledge of the findings of other digs and the cultures of neighboring groups may also be of value. A small fragment of woven material could tell the trained archeologist what the material was made of, how it was woven, and the kind of equipment used. The knowledge of implements, methods, and techniques of modern primitive peoples, may, if judiciously applied, give an indication of some of the aspects of the early people.

Publication

No matter how well conducted, an excavation can be lost to science unless it is adequately recorded and the results published. An unreported and unpublished excavation robs everyone of knowledge; sometimes this knowledge is irreplaceable. No one can successfully re-excavate a site; once explored, it is usually destroyed. Therefore, if an excavator does not publish his findings, probably no one else ever will.

A well written report is one that is easily understood. It customarily begins with a very short summary of the material and lists the main headings of each section. A systematic review and interpretation of new material usually follows. Other sections include a full statement of structural and stratigraphic evidence, a description and analysis of the finds, appendixes and index. Tables and pictures can help make the account clear and interesting.

Conclusion

The competent field archeologist takes the long view. He keeps in focus the continuum of human development even when he is analyzing its isolated bits and pieces from separate cultural deposits. His material is potsherds and bones, but in a sense he is a true historian: he makes the past live again. He knows that archeology is not a self-contained discipline but part of the wider study of man.

He must be able to observe critically and record accurately and objectively. He needs his scientific imagination, but as R.J.C. Atkinson has said, there is no place in archeology for intellectual partiality in the choice of facts.

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NEW WORLD PREHISTORY

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THE DEVELOPMENT OF MAN AND HIS CULTURE:

NEW WORLD PREHISTORY

Teacher Background Material

Grade Two

NEW WORLD PREHISTORY

When the Europeans began to explore the New World of the Western Hemisphere they found North and South America inhabited by many Indian tribes. These aboriginal groups ranged from the impressive civilizations in a belt from Mexico to Peru, on one hand, to primitive hunting and gathering tribes on the other. This variety of cultures excited Europeans and stimulated the search for the story of their origin and development.

Here we will summarize what is now known of New World Prehistory. The story begins with the migrations of man into the Western Hemisphere. The complex development of culture will be discussed in terms of broad cultural stages: Paleo-Indian, Archaic, Formative, Classic, Post Classic, and Historic. These stages are broad categories into which the various local cultures can be grouped. They begin with the earliest known evidences of man in the New World and end with the historic tribes, some of which survive today. Special attention will be placed on the cultural sequences of Central and North America. Developments in South America will be mentioned only briefly.

Migration of Man to the Western Hemisphere

Exactly when the first man migrated into the New World is not known, but anthropologists are confident that it occurred at least 10,000 years ago. Some students of prehistory would place this date at 20,000 years, or even earlier. Although fossil remains of humans have not yet been found to substantiate these early dates, several indirect forms of evidence support them. Such evidence includes: (1) artifacts found in association with the fossil remains of extinct animals that lived in the New World during this early period, and (2) the geological conditions of the period.

Two explanations of the arrival of men into the New World are in current literature: one of these describes the first Indians as sailors who reached the New World from the South Pacific Islands; the other explanation describes the first Indian, or Paleo-Indian, as a hunter who came across the Bering Straits from North Eastern Asia into Alaska while following or searching for game. Anthropologists hold that the Bering Straits route was more likely. They do not exclude contact via the South Pacific, but say that if it did occur, it was late and had little effect on the actual peopling of the Americas.

Geological conditions played an important part in the entrance of the Paleo-Indian into the New World through Alaska. Migration such as this would have been easier during a period when Asia and North America were connected by a land bridge. Such a bridge was formed during the glacial periods when large quantities of the Earth's water were frozen into the great ice sheets which covered much of Europe, Asia, and North America. The formation of these ice sheets reduced the level of the oceans and shallow areas were completely uncovered to form dry land. Thus, that shallow stretch of water which we call the Bering Straits, disappeared and dry land connected Asia and North America.

Of course this phenomenon probably occurred during each of the four great glacial periods, but it was during the fourth, or last, glaciation that the first Paleo-Indian entered the New World. There has been no evidence that any type of man other than true man (Homo sapiens sapiens) has ever lived in the New World. Although fossil evidence from the Old World indicates that Homo sapiens sapiens had not evolved during the first three glacial periods, it is generally assumed that it was during the closing stages of the last glacial period that man migrated from Asia to the Americas. Also during this time, some 15,000 to 30,000 years ago, a corridor opened in the glacier east of the Rocky Mountains, permitting the southward migration of the Paleo-Indian.

We have already suggested that the first immigrants into the New World were hunters who were following or searching for such extinct mammals as the mammoth and the bison (Bison antiquus). There is, however, good reason to believe that these early hunters did not enter all at one time, but in a series of migrations over an extended period. One of the best evidences of this assumption is the physical differences which exist among the Indian groups of the New World. For instance, the Eskimo, who were probably the last group to enter from Asia, (2,000 B. C.) are physically more similar to the inhabitants of Siberia than they are to Indian groups in the Americas. These differences are very slight and all of the Indian groups are Homo sapiens sapiens.

Slowly these early hunters moved southward. By 7000 B. C. they had traversed two continents and reached Tierra del Fuego at the tip of South America. In all probability, this southward movement was not in the form of a continuous march. Instead, they moved southward very slowly and irregularly, either following the movement of game, or searching for new game after exhausting the local supply.

Summarizing briefly, we have said that man is not indigenous to the New World, but evolved in the Eastern Hemisphere and entered the Western Hemisphere as a full-fledged Homo sapiens sapiens. His entrance was relatively late, but we can be sure that he was here by 10,000 B. C., and there is a good likelihood that the date of entrance was 20,000 or more years ago. The route of entrance was probably into Alaska via the Bering Straits and then gradually into the North and South American continents. There were probably a series of migrations with the individuals of each migration possessing slightly different physical characteristics.

Although the Paleo-Indian brought with him the culture which was prevalent in the Old World at the time of his departure, it is quite likely that most of the cultural achievements made in the Americas were made independently after he entered. The remainder of this chapter will be devoted to a discussion of these innovations.

The Paleo-Indian

The Paleo-Indians were hunters who entered the New World in search of game. Although there is reason to believe that they spread throughout the Americas, the most complete archeological information concerning the life of these peoples comes from the High Plains area in the western part of the United States. Even in these sites our knowledge is limited to a few stone artifacts found in association with the fossil bones of extinct animals. Intangible aspects of their culture such as

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*This is a summary chart. Only those cultures appearing in the text have been included

Cultural Stages	South America	Central America	North America Eastern	North America Western	Time
Historic			Iroquois Cherokee Creek	Pima Hopi	
Post Classic	Inca	Aztec Maya	Mississippian		A. D. 1500
Classic	Classic	Toltec Maya	(Hopewell)	Anasazi Mogollon	A. D. 1000
Formative	Formative	Formative	Woodland (Adena)	Hohokam	A. D. 1 1 B. C.
Archaic	Archaic	Archaic	Archaic	Cochise	1000 B. C.
Paleo-Indian	Paleo-Indian	Paleo-Indian	Plano Folsom Llano		5000 B. C. 10,000 B. C. 20,000 B. C.

language, social organization, and religion have not been preserved. However, some inferences can be made. For instance, because they were unable to find any grinding equipment, which would have been necessary for the preparation of plant foods, archeologists are reasonably sure that these early Indians were hunters who placed very little emphasis on gathering plant foods. The bones found in association with the Paleo-Indian artifacts indicate that the animals hunted were the now-extinct ice-age mammals such as the mammoth, the camel, the horse, and the bison.[1]

The remains of these vegetarian mammals in the plains supports geological evidence that during the ice-ages this region received more rainfall and was more fertile than it is now. Following the ice-age, however, there was apparently a period during which it was even drier than it is now. Finally, between five and two thousand years ago, the climate stabilized at roughly its present condition.

There is a relation between the climate, the fauna, and the artifacts found in the High Plains area. During the humid period there was an abundance of such ice-age giants as the mammoth. In New Mexico the Sandia and Clovis spear points were found with the fossils of mammoths. These and other artifacts which are associated with them are referred to as Llano culture and given a date of from 15,000 to 8,000 B. C. Following the humid period at about 8,000 B. C., the mammoths seem to have been largely replaced by an extinct form of the bison (Bison antiquus). The artifacts associated with the fossil remains of these animals are the carefully flaked and fluted Folsom points. Shortly after the development of Folsom culture, at about 7,500 B. C., yet another culture made its appearance on the High Plains. This culture, called the Plano, is associated with points which no longer possess the characteristic fluting of the Folsom points. It is also associated with smaller fauna.

Archeologically, none of these different Paleo-Indian cultures is more important than the others. Each plays a part in giving us an insight into the early cultural developments which took place in the New World. However, one of these cultures does have some special significance. This culture, represented by the carefully crafted Folsom points, is the one which the general reader is most likely to encounter. It was the discovery and excavation of the Folsom points between the years 1926 and 1929 which first gave definite proof of man's antiquity in the New World.

As has been the case with many buried sites, the first discovery of the site near Folsom, New Mexico, was largely an accident. A cowboy noticed some bones that had been uncovered after an arroyo (gully) had been deepened by rain. Recognizing these bones as neither cattle nor contemporary bison, he mentioned them several times during the next few years to his friends. It was not, however, until 1925, two years after his death, that the material was brought to the attention of the Denver Museum of Natural History. Paleontologists, geologists, and archeologists were sent to investigate the site. The bones were identified as those of an extinct form of bison which lived 8,000 years ago. An archeologist from the museum found a very unusual artifact, a point, in connection with these fossil remains and he felt sure that he had established proof that man had hunted these animals.

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[1] The horse and bison of this period were not the same as the modern varieties. The horse became extinct in the New World and was reintroduced by Europeans. There were several types of bison, such as Bison antiquus, that were larger than the Bison bison of historic times.

American archeologists, however, were hesitant to accept this evidence. Up until this time, they had had no proof that man lived in the New World for even half this length of time. They thought it likely that the artifact and the bones had come together accidentally, probably as a result of erosion.

In 1927, the Denver Museum archeologist found a second point, this time definitely in association with the fossil bones. Before either the point or the bones were removed, invitations were sent to archeologists throughout the United States to come and examine the find _in situs_. Several did come and concurred with the finder that the artifact and the bones had not come together accidentally, but were definitely associated and proved that man had lived in the New World for about 10,000 years.

The distinctive artifacts found in the Folsom, New Mexico, site were name Folsom, following the custom of naming new types of artifacts after the location in which they were first discovered. Thus even though other archeologica sites have turned up similar and better preserved examples of the Folsom culture, they are still called after the original site.

Exactly what do we know about the early bison hunters? Actually we know very little about them, but when we stop to consider that they lived almost 10,000 years ago and left absolutely no written records, any knowledge at all is quite an accomplishment. No skeletal remains have been found of the people who made the Folsom points. It has been suggested that the reason for this is that these people may have followed a custom which was prevalent in the plains during historic times and still prevails in some parts of Australia. This is the practice of leaving the dead exposed on platforms built above the ground. If such was the case, the bones would have become scattered, and even if a modern archeologist found one he would merely assume it was part of the remain of a much more recent individual. What we do have of the Folsom people are their artifacts. These implements of stone, wood, and in some instances, bone, take several forms. The most easily recognizable of these is the carefully worked spear point which itself bears the name of the culture. The Folsom point is small, being only about three inches in length. Lengthwise from the center of both sides a long narrow flake has been removed, producing a channel or flute from which the term fluted point derived. The exact reason for the fluting is not known, but it has been speculated that it facilitated the hafting of the point to a wooden shaft. This is not necessarily the case, however, for the flute might easily have been the result of aesthetic or religious motivations. In any event, fluted points are not characteristic of historic times and it is likely that we will never be sure of the reasons behind this unique technique.

The bow and arrow was as yet unknown in North America at the time of the Folsom culture and the spear was the principal weapon. This spear was probably propelled by means of a spear thrower or _atlatl_. This ingenious device, which is used in many areas today, is a stick or board with a hook at one end which fits a notch in the end of the spear. The thrower grasps the opposite end of the atlatl and swings it with an overhand motion. Thus, the atlatl acts as an extension of the thrower's arm, adding leverage and force to the spear.

Other artifacts also appear in the Folsom sites. These, however, are not as distinctive as the points, and often could not be identified as Folsom artifacts if they were not found in connection with the fluted points. Among these items are scrapers, knives, choppers, drills, smoothers made of sandstone and used for smoothing objects of stone, wood, and bone.

The Archaic Stage

Although the specialized big game hunting of the Paleo-Indian persisted for some time, at a date of about 5,000 B. C., many groups in the New World had begun to turn to more varied subsistence activities. Exactly what caused this change is not known. It is reasonable to assume that either the ice-age mammals disappeared as a result of climatic changes or the Indians themselves moved into areas where these animals were not present and had to seek other sources of food. These changes are rather clearly marked in archeological sites. Instead of finding only the bones of large mammals typical of the Paleo-Indian sites, the archeologists now find evidence of the total exploitation of the environment: there are grinding stones for the preparation of plant food, huge piles of shell resulting from the gathering of shellfish, as well as bones of fish and a variety of small animals. At times evidence of agriculture is found, but in such cases it is not the principal subsistence activity, and the Archaic groups have not yet begun to lead the settled life of the true agriculturist.

In summary we may say that the economy of the Archaic stage was marked by an increasing dependence on gathering as well as the hunting of smaller and more varied animals. This is the hunting and gathering way of life. The Archaic was characterized by a full exploitation of the environment. Because environments vary from region to region the artifact complex was astonishingly varied and broad. In the eastern area of North America, the Archaic period took the form of an adaptation to the foods available in the forests and the streams. Subsistence came from hunting, gathering wild plants, fishing, and gathering shellfish. In many places these activities took the form of a seasonal cycle, with the groups moving in order to have access to the type of food being used during a particular period. In other areas, particularly in those where shellfish were the principal source of food, there appears to have been a tendency toward a more sedentary existence--a conclusion based on the large shell heaps found in these areas.

Closely associated with the more varied subsistence activities of the eastern Archaic is a greater variety of tools. Possibly the most noteworthy of these are the various items of polished stone. These include woodworking tools such as axes and adzes, as well as stone pipes and vessels.

The archaic sites give archeologists some indication of the non-material aspects of this culture. For instance, a more complex social organization can be inferred from the long distance trade which took place during this period. Copper items have been found in the Southeast which may have come from as far away as Lake Superior. Sea shell ornaments that could have originated only at the Atlantic or Gulf of Mexico have been found in inland sites. Another indication of the increasing complexity of non-material culture is the number of intentional burials which have been found. These burials and the artifacts which have been found in connection with them give us some understanding of the religious practices of these peoples.

Nuclear America

The Formative Stage.

Although we will presently discuss the Formative stage as it developed in North America, we will first discuss the Formative, Classic, and Post-Classic stages as they developed in Nuclear America. Nuclear America consists of Mexico, Central America, and the Peruvian area of South America. It was here that agriculture made settled villages possible. These gradually increased in size to become the only true cities of the New World.

The Formative Stage is characterized by the development of settled village life, which in most parts of the New World could not take place until agriculture had become the principal subsistence activity. The reason for discussing the Formative stage in Nuclear America first is that it was here that the most important food plant in the New World was domesticated. This plant is corn, or as it is more properly called, maize.

Evidence indicates that prior to the development of agriculture, Nuclear America had experienced both the hunting culture of the Paleo-Indian and the hunting and gathering cultures of the Archaic stage. However, sometime between the years 7,000 and 6,000 B. C. there were attempts to domesticate such plants as squash, peppers, gourds, and beans at Tamalipas, in Northeast Mexico. Maize, itself, appears to have been first cultivated between the years 3,400 and 2,300 B. C. Although the first ears were small and supplied only a limited amount of food, maize appears to have improved rapidly under domestication. By 1500 B. C. it was the principal source of food for the many settled agricultural villages which dotted Nuclear America.

Other cultural characteristics of the Formative stage in Nuclear America include the domestication of other plants such as manioc, squash, beans, and even cotton, which in itself indicates spinning and weaving. Some animals were also present: the dog, and in Peru, probably the llama. Formative stage artifacts were mainly pottery, handmade figurines, and during the latter part of the stage, a type of religious or public architecture in the form of stepped pyramids which diffused throughout Nuclear America from a center probably in the Mayan area.

The Classic Stage.

The last two stages in our discussion of the New World had their development in Nuclear America only. They arose from the village agricultural base, characteristic of the Formative stage, and in the fine arts, religious architecture, and population intensity, independently attained a level of civilization most frequently identified with the Old World civilizations of the Tigris-Euphrates, Nile, and Indus Valleys. Many believe that the influence of the Nuclear American civilizations markedly influenced the development of the North American agricultural cultures.

CHART II

Development of the Anasazi

Estimated Date	Period	
A. D. 1500 to date	Pueblo V	Historic Pueblo
A. D. 1300- 1500	Pueblo IV	Regressive Pueblo
A. D. 1050 - 1300	Pueblo III	Great Pueblo
A. D. 900 - 1050	Pueblo II	
A. D. 700 - 900	Pueblo I	Developmental Pueblo
A. D. 500 - 700	Basketmaker III	Modified Basketmaker
A. D. 100 - 500	Basketmaker II*	Basketmaker

*Basketmaker I, a theoretical cultral period, was found not to have existed.

Classic culture developed in Nuclear America in two separate areas. One of these was in Mexico and Central America, and the other was in the Peruvian area of South America. Development in both areas seems to have followed much the same pattern. Classic traits developed in the first millenium A. D., followed by the Post-Classic developments shortly prior to European contact. Neither area seems to have exerted much influence on the other. They are usually thought of as two similar but separate cultural developments. The following discussion will concern itself with the cultural developments in Mexico and Central America.

Probably the most significant aspect of the Classic stage was the growth of large ceremonial centers. It was at these centers, with their flat-topped stepped pyramids and rectangular courtyards or plazas, that the peasants gathered to receive religious instruction and inspiration from their priest-leaders. Since it was primarily these priest-leaders who inhabited the ceremonial centers, there is some doubt as to whether the centers themselves can be thought of as true cities. Cities as we generally think of them are not only political and religious centers but also economic centers with a complex division of labor. This division of labor is possible when an economy is capable of producing enough food to support these non-agricultural laborers. In Classic Maya society, a good example of the Classic stage, the construction of the buildings and roads in the ceremonial centers was carried out by surplus farm labor from the agricultural villages. They returned to their farm villages when the tasks were completed. The villages were the real population centers of Classic Maya culture. The people of these villages lived in much the same manner as they had during the Formative stage. They planted corn, squash, beans; and wove fine cloth of cotton. They smoked tobacco; fashioned artifacts of wood, clay, stone; and also used rubber and metal. However, their metal techniques could not be considered true metallurgy. They did not smelt metal ore and cast molten metals into artifacts. They merely hammered objects out of the raw metal which they found in the natural state.

If the life of the peasant changed little during the Classic stage, the religious leaders who were supported by their agricultural efforts certainly did more than their share in contributing to the list of cultural developments indigenous to the New World. In the area of construction, the corbeled arch is attributed to the Classic Maya. The most widely heralded achievements of these leaders, however, were in the areas of astronomy and mathematics. Combining these two fields of study, the priests developed not one but two highly accurate calendars. One of these was for religious purposes and the other for secular activities. Because of the length of the year differing in the two systems, it was only once in fifty-two years that New Year's Day in both systems coincided. Such a phenomenon was a time of special ceremony for all members of the society.

A form of picture writing or hieroglyphics was also developed. Much of this writing is found on large stone monuments call stelae. It is believed that these monuments have a religious significance, but since the writing is still largely undeciphered their exact significance is unknown.

Another major Maya development, again connected with mathematics, is the concept of zero. This important concept has been, as far as can be discovered, developed only twice in the history of mankind--once in the Old World by the Arabs from whom it came to form the basis of our own number system, and once in the New

World by the Maya, who were using it before the Romans built an empire and civilization without having the use of it.

Post-Classic. Beginning about A. D. 900 - 1000, the Classic cultures entered into what has been described as a "dark age." The religious leaders seem to have become subordinate to a group of militaristic aristocrats. Concern with the fine arts and religion became subordinate to a concern with warfare. The exact causes of this change are as yet unknown, but in the Mexican area it may well have been brought about by the immigration of barbarian groups from the north.

Out of this unrest, beginning 600 years prior to Spanish conquest, the Post-Classic stage of Nuclear America developed. Two names are widely associated with this stage. These are the Inca of Peru and the Aztec of Mexico. The Inca empire was a well organized and efficiently administered unitary state that went to great lengths to acculturate conquered groups. The Aztec empire, on the other hand, consisted of a number of city-states exercising local autonomy but paying tribute and acknowledging the hegemony of the dominant city in the Mexican-Central American area.

At the time of the Spanish conquest, Tenochtitlan (Mexico City) was the most powerful of these cities. The people who inhabited Tenochtitlan were one of a number of Nahua-speaking groups who entered Mexico from the north during the twelfth century. Collectively, these groups are known as Aztecs. However, since it is the particular group that founded Tenochtitlan which is best known, the name Aztec is often used to refer solely to them. This restricted use of the term will be followed here.

The Aztecs represent the Post-Classic period in Mexico. Their culture was essentially built on that of the Classic (Toltec) stage in that they continued to use such earlier innovations as weaving and pottery. They did, however, use these skills more extensively and added some items such as metallurgy to the list of cultural innovations indigenous to the New World. Their real contribution, however, seems to lie in the urban life of their populations. In contrast to the ceremonial centers of the Classic stage, the Post-Classic centers such as Tenochtitlan, were cities in every sense of the term. Their huge populations consisted not only of the ruling classes, but of merchants, craftsmen, military personnel, and other non-agricultural specialists. It should be remembered, however, that it was the farmers who supported these specialists and allowed the urban centers to exist.

There is little doubt that the physical location of Tenochtitlan was largely responsible for its size. Tenochtitlan was built in the center of a large lake which offered excellent defense against enemies. In the absence of wheeled vehicles the canal network provided a means of bringing in the food necessary for feeding its large population, and removing the wastes which they accumulated. Drinking water was supplied by means of two aqueducts which brought water from nearby mountains. At the time of the Spanish conquest, water and sewerage facilities provided for a population of 300,000 or more in a manner better than any to which the Spanish were accustomed.

Territorially, the city was divided into four main sections. These in turn were divided into smaller units, which were called calpulli, and are thought to have been based primarily on kinship affiliation. The calpulli were subdivided twice with the smallest unit being the family unit or chinampa. The chinampa was not owned by the individual, however, but by a larger kinship unit or clan. The individual was alloted land on the basis of his affiliation with a particular clan and his ability to keep it productive.

The system of social stratification in Aztec society was very rigid. At the top of the social order was the emperor. Beneath him were the religious and military leaders who were of roughly equal rank. Subordinate to these, but still enjoying a privileged position because of their necessary services, were a group of merchants who directed trade caravans throughout Mexico and Central America. Next came the artisans and freemen farmers, and then the slaves who comprised a substantial part of the population. For the most part, a person inherited his rank or position. The slaves were the primary exception to this rule. That is to say that a person could not be born into slavery. Slaves were either military captives or freemen who had become slaves for a number of reasons, such as punishment for a crime. Even though the other ranks in the society were based primarily on inheritance, it was necessary for a person to prove himself before he could occupy a high position. This usually involved the successul carrying out of some civic duties. Thus, Moctezuma II, who was emperor at the time of Spanish conquest, could not have become emperor without having been born into the proper family, and yet he had to prove himself superior to other members of the same family.

Religion and warfare were very closely related in Aztec society. While there is little doubt that warfare was of economic importance to an increasing society, it was equally important to the Aztec as a means of supplying the sacrificial victims necessary for their religion. This second motive was so important that at times bloodless wars were held for the sole purpose of obtaining sacrificial offerings. It has been estimated that as many as 20,000 individuals were sacrificed in a single year. While the Aztec were taught that such a death was honorable and some volunteered themselves, the greatest number of victims were military captives. This somewhat questionable reason for warfare, combined with the Aztec's lack of concern with the captured state for purposes other than tribute, is directly connected with their conquest by the Spanish. Most of the groups that had been conquered by the Aztecs were more than willing to join the Spanish against them. Without the help of these Indians the handful of Spanish under Cortez would not have been successful against the Aztec.

The Formative Stage in North America

The agriculture-based village life of the Formative stage developed in only two areas of North America. These areas are the Southwest and the eastern woodlands, both of which show indications of influence from Nuclear America.

Eastern Formative. During the period from 500 B. C. to A. D. 500, portions of eastern North America adopted the village life associated with maize as well as a number of other related traits, such as pottery and weaving. This early phase of the eastern Formative stage is known as Woodland culture. Actually the transition of the eastern area from Archaic to Woodland culture did not take place all at one time. It was a slow process--its beginnings, which can be traced in the development of pottery making, seem to go back as far as 1500 B.C. and in some cases, even earlier.

The Woodland cultures reached the peak of their development in the Ohio River Valley area. The older of the culture developments in this area is known as Adena. It is marked by elaboration in the making and decoration of pottery objects, and by its refined mortuary practices as evidenced by the number of burial mounds which are found in Adena sites. Subsistence at Adena varied little from that which has already been described for the eastern Archaic. A large variety of wild plants and animals were eaten, and it is possible that agriculture was practiced.

Hopewell culture, which occurred later in the same area, was more widely distributed than the Adena. Hopewellian traits are found throughout the Mississippi Valley and over much of the southeast. The interest in the decoration of artifacts continued during the Hopewell phase. Among the most interesting of these artifacts are the stone pipes for the smoking of tobacco. The bowls of these are often interestingly carved animal effigies situated on a platform. It is from this that the name "platform pipe" is derived. The wide distribution of these and other Hopewellian traits has led many archeologists to believe that the various groups were connected by a complex system of trade routes, routes that could bring such items as alligator teeth into the area which is now central Ohio.

After the Adena-Hopewell phase, many areas of the eastern Woodland culture experienced a decline in technological excellence. A notable exception to this, however, occurred in the Mississippi River Valley. This culture, called Mississippian, is associated with increase in the size of the villages to the point where they are usually thought of as towns. Many of these were fortified and contained plazas and flat-topped mounds reminding us of the late Formative developments in Nuclear America. In some areas of the Southeast, Mississippian culture is found in association with what has become known as the Southern or Death Cult. Excellent examples of this are the Etowah site in Northwest Georgia and the sites near Moundville, Alabama. The Mississippian groups were farmers. Their villages, as we have mentioned, were large and were composed of rectangular houses made of logs that had been plastered with mud, a technique which anthropologists call wattle-and-daub construction. The eastern cultures developed no further, however, for it was in this phase of indigenous innovation that European contact was established.

Southwest. At about the same time that the Folsom culture appeared in the High Plains, there appeared in many parts of the southwest a type of Archaic culture which has come to be called Desert Culture. This culture extended over a large part of the southwestern United States and differed from the big game hunting Paleo-Indian cultures in that it placed emphasis on the gathering of wild seeds and the hunting of smaller animals such as deer and rabbit.

Archeologists do not completely agree about the relationship of the Paleo-Indian culture and the Desert Culture of the Southwest. Various suggestions have been made, but evidence is not yet available to allow us to state definitely whether the two cultures co-existed, or if the Desert Culture, like the

Eastern Archaic, is an outgrowth of an earlier Paleo-Indian culture which was brought about by a changing environment. We do know, however, that the climate of the area was becoming drier. A drier climate would offer fewer restrictions to a seed-gethering economy than it would to one based primarily on the hunting of large animals. Thus we can conclude that climatic changes were largely responsible for the disappearance of the Paleo-Indian, who either followed his game into more favorable areas or was forced to modify his means of subsistence.

A local form of the Desert Culture, Cochise, developed in the southeast of Arizona and the southwest of New Mexico. Cochise culture was essentially a seed collecting culture, but there are indications, notably from Bat Cave in New Mexico, that simple maize agriculture may have been practiced as early as 4000 B. C. There is no reason to believe, however, that this was an area in which maize was domesticated. Instead, it is more probable that even by this early date primitive forms of maize had diffused northward from Nuclear America. This knowledge of agriculture, whatever its origin, did not produce change in Cochise culture until much later. It was not until about 2,000 B. C. that this simple seed collecting culture began to show marked changes. These changes came in the form of the development of at least three distinct cultures from the Cochise base. These were the Mogollon, the Hohokam, and the Anasazi cultures. While these did not develop at the same time, they were all well established by A. D. 700 to 900, and have been described as the climax of southwestern culture.

The similarities among these three cultures were much greater than the differences caused by the contrasting environmental regions in which the three cultures developed.

The Mogollon, first of the three to develop pottery, occupied a mountain territory of forest and scrub and laid emphasis on plant gathering. Exactly what happened to this group is unknown, but they did not survive into historic times as a recognizable cultural group.

The Hohokam groups to the southwest were desert dwellers who used an irrigation system to grow maize. This group, which reached its zenith somewhere between A. D. 700 and A. D. 1100, shows the most marked influence from Nuclear America. The influence is apparent in the pottery, the weaving, and in such non-material cultural aspects as burials, social structures, and recreation. It is likely that descendants of the Hohokam peoples may be found today in historic desert groups such as the Pima and the Papago.

Although the Anasazi culture developed last, it eventually became the largest and most highly developed of the three. The Anasazi people were farmers who lived on the high plateaus or mesas. During the earlier phases the people of this culture are referred to as Basket Makers because they did not have pottery, but relied instead on baskets for containers. During this phase they grew maize, tobacco, and pumpkins, using an agricultural implement called a dibble, which is a simple wooden stick about 3 or 4 feet in length. They also used a spear and an atlatl or throwing stick to hunt deer and other smaller animals.

From approximately A. D. 500 to 700 the Basket Makers entered the modified phase. During this phase they lived in settled villages and began to cultivate beans and keep turkeys. They began to use pottery in addition to the baskets, and substituted bows and arrows for spears. Their houses of this phase were pit houses with floors sunk below ground level. During A. D. 700 to 1000 the Anasazi villages grew in size and the compact Pueblo house replaced the pit house. They reached their height of development between A. D. 1000 and A. D. 1300. This 300 year span is known as Pueblo III, or the Great Period.[1] The progressive village enlargement culminated in the compact masonry villages which we have come to call Pueblos. These compact villages, which were capable of housing thousands of individuals, were built in different sizes and shapes. They ranged from cliff houses of the type found at Mesa Verde to those built on level land, either in the lowlands like Pueblo Bonito, or on the tops of mesas like Awatovi. In either case, the farms were located outside the villages, with the farmers going out each day to their fields and returning each evening to the protection of the village. The Pueblo III culture did not last long. By 1300 there are indications that many of the larger villages had been abandoned, and there seems to have been a general decay of the Pueblo III culture. There was, however, a slight renaissance in the Pueblo V period which gave rise to the historic groups such as the Zuni and the Hopi. The Hopi will be described in the next chapter. A description of their culture will indicate how the Formative stage has been continued in the Twentieth Century among an isolated people.

Other Developments

There are two cultural developments which are difficult to fit into the outline which has been presented here. These are the Arctic Eskimo and the Plains Indian cultures.

Eskimo. Very little is known about the prehistory of the Arctic cultures. Where the Eskimo came from or when he came is still largely a matter of speculation. The oldest ruins in the region, which are found at Cape Denbigh, Alaska, are only about 4,000 years old. There are two things, however, which can be inferred about the people. First, because the oldest dates become more recent as one moves eastward along the Arctic Coast, it appears that these peoples moved into the area immediately after entering the New World from the Bering Straits, and not upward from the North American Continent. Secondly, because their physical features are more similar to those of groups living in Siberia than they are to American Indian groups, it is likely that they were one of the last groups to enter the New World.

Plains Indians. The American Indian most familiar to the television and motion picture audience is the Plains Indian. The mounted buffalo hunter with feathered war bonnets, sun dances, and tepees was probably the least representative of all the American Indians.

The Plains Indian was a phenomenon which did not, and could not, have developed until after European contact. He was primarily a hunter and raider whose very existence depended on the horse. The horse allowed him to cover rapidly great distances on the barren western plains. Yet the modern horse is not indigenous to the New World and was introduced by the Spanish in the sixteenth century.

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[1] The complete Anasazi or Basket Maker-Pueblo sequence is not presented. Only the most important steps in the development are discussed. See Chart II.

Prior to the introduction of the horse, very few Indians lived on the plains, mainly because of the difficulties in obtaining food. Once mounted, however, the Indian found an excellent source of food in the form of the buffalo. This new way of life was so productive that it drew groups into the plains from all areas. Even agricultural groups gave up their gardens and settled way of life to become nomadic hunters.

Why were the plains so attractive and why did so many diverse groups give up their original cultures and adopt that of the Plains Indian? There are a number of reasons: (1) the advent of the horse made life on the plains possible, (2) pressure caused by the gradual westward movement of the European forced some groups onto the Plains, (3) other groups, settled on the edges of the plains, may have been forced to adopt the nomadic life of the hunter as a means of defense against the raids of these more warlike groups.

The Plains horse culture, which reached its climax in the early nineteenth century, collapsed quickly after 1870. The arrival of the white settlers and the near extermination of the buffalo herds brought an end to the pattern of hunting and raiding. The culture of the Plains Indians on the reservations today is a pale reflection of what it once was. However, it made such an impact on the thinking of people all over the world that they are the basis for the stereotype of the American Indian. In fact, many Indians all over North America have adopted certain Plains Indian culture traits because they felt that these traits are expected of them.

Summary

During the course of this paper we have discussed five stages in New World Prehistory. These are the Paleo-Indian, the Archaic, the Formative, the Classic, and the Post-Classic. Caution, however, should be exercised in connection with the use of these stages. Only in the broadest sense of the entire New World can they be thought of as a developmental sequence. At no time should they be considered as stages through which every area or group in the New World had to pass. Indeed, after about 8,000 B. C. it was possible to find two or more of these "stages" existing simultaneously in some part of the Americas. At best, then, the sequence discussed here is merely a method of classifying and comparing cultures which occurred at different times in different places.

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THE HOPI

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THE DEVELOPMENT OF MAN AND HIS CULTURE:
NEW WORLD PREHISTORY

Teacher Background Material

Grade Two

THE HOPI

Introduction

The Hopi are an historic group of Pueblo Indians in the southwestern United States. The Hopi have been selected for study because they represent a continuation of the Formative Stage in the development of southwest Indian culture, notwithstanding the assimilation of certain Western traits. Ethnographic data from contemporary Indian groups helps to classify interpretations based on archeological evidence of prehistoric Indian cultures, such as the Anasazi, of whom the Hopi are probably a living fragment.

In the following discussion the term Anglo is used as a conventional term to distinguish contact with United States culture in contrast to Spanish culture.

Location. The Hopi are a group of Pueblo Indians living in eleven villages on the spurs of Black Mesa in northeastern Arizona. Black Mesa is a huge sandstone structure approximately 60 square miles in size, and averaging 8000 feet high at the northern-most extremity. Black Mesa plays an important part in Hopi economy, for it serves as a reservoir of water and, due to its southward slope, allows sufficient underwater seepage and surface run-off to support corn and other crops in the vicinity of the Hopi villages. This source of water is both a permissive and a limiting factor. It enables the Hopi to lead a settled agricultural life in the midst of an inhospitable desert, but it restricts the land available for cultivation. The spurs of this mesa are those upon which the Hopi have erected their villages. These spurs average 600 feet in height and project downward into a sandfilled basin, a waste of land dotted with desert vegetation and cut by gullies and washes.

Physical environment. The climate of the Hopi country is extremely severe, and has had a profound effect on their religious beliefs and practices. The temperature varies from -9°F. in the Winter to well over 98°F. in the Summer. The annual rainfall, hardly sufficient to support plant growth, varies from .4" in May to 2.5" in July. Over a ten year period, the range is from 5" in the driest years to 15" in the wettest years. Rainfall is usually in the form of thunderstorms of short duration. Storms generate over the San Francisco peaks, but many are dissipated by accompanying winds before they reach the pueblos. Those that do appear are often so localized that only 300 acres of land are covered at one time. Run-off waters from the Mesa appear in such quantities through June and August that there is much flooding and damage to the fields. The growing season, measured from the last killing frost of June to the earliest of September, lasts about 105 days.

Generally speaking, the soil of the region is not conducive to good plant growth. Not only is there an over-abundance of alkali salts, but in addition there is little residual soil due to scanty vegetation, high winds, and rapid water run-off. The infertile soil requires irrigation and much patience and industry are needed to make a crop.

Village history. The Hopi represent one of the few remaining descendants of the Anasazi culture, and are perhaps the oldest survivors of the desert dwellers. Indeed, archeological evidence indicates that Old Orabi, one of the present-day Hopi villages, is the oldest inhabited village in the United States. Located in an inhospitable environment in northeastern Arizona, the Hopi maintain a way of life that is in most respects unique. In spite of the pressure of modernization, they maintain a functionally integrated social structure, together with a ceremonial complex and a technology which have persisted relatively intact since the coming of the Spanish in the 16th century.

Present-day Hopi culture has its roots in the Pueblo period which, as we saw in the preceding section, reached its maturity between the 11th and 14th centuries, and which shortly thereafter began to decay with increasing pressure of marauding nomads, a drought cycle, and finally, contact with the Spanish.

Unlike the other Indian tribes of this region, however, Hopi contacts with the Spanish were limited. Not only were they located in a relatively inaccessible region, but they were considered by the Spanish to be on the frontier. The Hopi thereby escaped both from the payments of tribute and from prolonged proselytization by Spanish missionaries. In 1660, the Spanish abuses of the Pueblo Indians precipitated a general rebellion. Although the Hopi did not participate directly in the rebellion, they did permit other Pueblo refugees to settle villages in their area. The Hopi moved their villages from below the Mesa to the tops, where they are located today. In 1701, the anticipated attack by the Spanish materialized, but the protective measures taken by the Hopi proved effective and the Spanish retreated.

As missionary influence increased, however, the Hopi became divided on the issue of Spanish religious intervention. About 1700 the matter was settled by an attack of the anti-Spanish Hopi on the pro-Spanish group. The village of Awatovi was destroyed along with the pro-Spanish inhabitants. After these events there was a period of relative peace. The Hopi were more than ever determined to maintain their distinctiveness, despite increasing pressures brought by missionaries. However, in 1777, a series of dry years followed by a smallpox epidemic forced the Hopi to ask aid from the Spanish. Three years later the rains returned once again, the Hopi prosperity returned, and they once again resumed their defiance of Spanish rule.

With the withdrawal of Spanish colonial control toward the latter part of the 1700's, the Hopi faced a new threat--that of marauding Navajo and Apache. It was not until the 1880's that the U. S. Army brought some measure of security and contact began with Americans. In 1874 an agency for the Hopi was established at Keams Canyon by the Indian Bureau, and in 1882 a reservation was established for the Hopi as a means of protection from encroachment from both Indians and whites. Until this time, the Hopi had changed little since first contact with the Spanish. However, the introduction of Anglo concepts of education, changes in land tenure, and the introduction of new tools and technology precipitated factional disputes over the preservation of old ways and the acceptance of new ways. Groups favoring change moved to the valleys and formed new "progressive" villages with the traditionalists clinging to the pueblos on the Mesa top.

In the early 1920's, the deteriorating conditions of the Indian situation became apparent, and a general reform aimed at govermental re-evaluation of their policies toward the Indian was inaugurated. In 1933, questionnaires seeking to identify the problems which the Indians deemed central were sent to all the tribes. At the same time legislators in Washington proposed that all provisions concerning the Indian problem be put under one Bill, which was passed as the Indian Reorganization Act in 1934. In its final form, the Bill provided for administrative training of Indian leadership, stoppage of Indian land allotment, agricultural provisions, the establishment of an industrial credit system, and enforcement of civil and criminal law by tribes.

Soon after the passage of the Indian Reorganization Act, the Hopi began to feel its effects. The Act was presented to the Hopi in early 1935 and was accepted by the tribe later in the year. With the aid of Indian Agents, a tribal constitution and by-laws designed to give the Hopi a self-government was drawn, and a tribal council and court established.

Since the formation of the tribal council there has been much internal opposition to its operation, and even today the conservative Hopi consider the Charter a bone of contention. However, by 1955 the tribal council was recognized by the Secretary of the Interior as the governing body of the Hopi. Politically, the Hopi constitute a protected enclave as wards of the national government. This protected status is one reason why the Hopi identity has been maintained, notwithstanding adjustments to the social and technological impact of the dominant Anglo culture.

Material Culture

Housing. The Hopi pueblo is a multi-storied level of contiguous apartments. The compact arrangement of the Hopi houses on top of the Mesa is said to result from a conscious effort to obtain maximum benefits of the sun's heat and light, and to secure protection from the wind and the cold. Whether or not this is true is open to speculation. However, we do know that the major cause leading to the pueblo form of architecture was protection. Following raids by predatory tribes, the people were forced to move and consolidate. Clans formed and became the pueblo. Pressures from the predatory tribes and a desire for sunny exposure were probably both factors entering into the form of the houses.

The Hopi pueblo consists of a series of specialized areas. These are living rooms, store rooms, courtyards, and ceremonial chambers.

The living room ranges from 8 by 10 feet to 14 by 16 feet and contains a fireplace, a metate, and meal bins. Doorways, made in the walls of the house about 18 inches above the floor, are small and raised to keep out the cold winds, and are often closed off by a screen of twigs, skins, or blankets. Ventilation in these houses is poor, and the walls are frequently re-plastered to cover up the carbon left by the smoke.

Store rooms are found either as a part of the house or as a separate structure by themselves. Each is carefully sealed up with clay to prevent rats and other rodents from destroying the stored corn or other food.

The courts are of two types: open or closed. The open courts are the places where the inhabitants gather during good weather to eat and sleep. The enclosed courts may be used for council meetings or for ceremonial gatherings.

The ceremonial chambers, or kivas, are large subterranean chambers. These are the centers of ritual activity, although they serve as clubhouses or gathering places for the men to weave and spin, also.

Household utensils. Household utensils are largely made from gourds, which provide material for canteens, spoons, cups, medicine bottles, and dippers. Other household items include soap made from the yucca root, string from yucca leaves, greasewood stirring rods, pegs, and tools; brooms made from shrubs, sticky plants used as fly catchers. Almost every house has an oven, made from sandstone slabs cut from a quarry seven miles from the village, and carried by burro or wagon to the house.

Dress. Typical Hopi dress is much like that of the western Anglo; the men wearing pants, shirts, and shoes; the women wearing dresses and sandals. However, a few traces of the traditional pueblo attire may still be seen. Essentially, this consists of banged hair done up with a knot at the back; breechclouts made of soft deer skin and fur; robes made from the skin of larger game, and other parts of dress of cat skin, and other dyed or undyed parts of animals. The Hopi take special pride in personal decoration, and often wear turquoise and shell ornaments, and necklaces of flowers or fruits. Although face and body paint made from sunflower seeds and corn smut is often used by the performers of certain ceremonies, color is not always desired, and the skin may be bleached.

Economic Organization

The Hopi live in an environment which affords comparatively little plant and animal life, and they have by necessity become primarily farmers. One of the major factors leading to their success as agriculturists is the Black Mesa which, as was noted in the introduction, supplies the major source of water. Aside from their agricultural activities, the Hopi rely on animal husbandry and, to a lesser extent, gathering and hunting as food sources.

Division of labor. For the Hopi, the separation of employments is primarily conventional, and is based only secondarily on clan affiliation and age. The men perform such energetic outdoor activities as farming, herding, and hunting; provide wood and water as it is needed for their families; and cooperate in carrying out those rituals which have direct economic value. Men also attend to such sedentary activities as weaving and moccasin-making during their spare time in the winter months. The women care for the house, provide regular meals, grind corn, prepare foods for ceremonials and gift exchange, make pottery and baskets and care for the children. Occasionally they may help the men in the fields, but this is generally done only in connection with the - ceremonials.

Specialization is relatively absent in economic activity, although some do excel in various skills, and are sought out when there is work that requires special treatment. Specialization occurs mainly in the ceremonial societies, each of which specializes in curing a specific disease. This is not restricted to the societies, however, for two other types of midical specialists may be found.

Organized labor among the Hopi takes the form of the work party. Based on the necessity for mutual aid, the work party consists of a group of workers who come together to perform a given task. Two types may be distinguished. both based on work obligations. The first involves an obligation of self-interest, each one helping another because he in turn may need help at some time. Labor organized on this basis forms kinship, societal, and intervillage work groups. The second type of working party is composed of village members who are obligated on the basis of pride in the village, loyalty to the village officials, and charitable feelings toward the ill and unfortunate. Social pressures insure that all will perform their share of the work.

Land tenure. Ownership and control of land is divided into three categories: village lands, clan lands, and individual holdings. Village lands are held in part by the village chief. Clan lands account for the greater part of the territory and are divided into sections ranging from a few square yards to more than a square mile. Although the size of clan lands may vary, there is no correlation between the number of individuals in a clan and the size of its holdings. Generally, the clans have two or more plots located away from each other in case of crop failure. The families within the clan each farm a specific segment of the land, and each knows and respects the land belonging to other families and to other clans.

Ownership and control of lands is vested in the maternal household. The women are the owners and this includes the crops grown on their land. Althugh land is generally passed on from mother to daughter, the actual title to land is often blurred due to the close proximity of the extended family. The ultimate in clan ownership is the clan mother, and it is her duty to intervene in land disputes. This system of land tenure, based on maternal inheritance of usufruct, is not closed. Not only are men able to acquire land by inheritance from relatives, but by moving away from the mesa village they can claim a plot of land as their own and can freely pass it on to their children.

Agricultural system. Hopi economic life, although interrelated with and dependent upon seasonal conditions, is closely associated with a fixed calendar, which also serves to determine the dates of religious ceremonies. The agricultural cycle begins with the coming of spring and leads to long days of work in the fields. The major activities begin with the clearing of the fields and end only when the last of the harvest is taken in, usually late in October. Periods of rest and refreshment from the daily routine are provided by the kachina[1] dances, whose performances are determined also by the calendar. Following the last October harvest, there is a period during which salt and pigment expeditions are made. Visits for sociability and trade are made to the neighboring tribes.

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[1] The word Kachina, sometimes spelled Katcina, has several uses. It is applied to the gods themselves, to the Kachina dancers who are masked impersonations of the gods, and to Kachina dolls that are toy-sized representations of the Kachinas.

The selection of land suitable for cultivation depends on the position of a field in relation to the summer floods, and the differentiation of soil according to the crop to be planted. After locating the fertile areas, actual work begins with the clearing of the fields. A digging stick, approximately 2 feet in length, is used to remove plant vegetation and to poke seed holes. Other tools involved in this operation include the planting stick with a pointed end, a metal pusher-hoe, and a forked rake made of juniper wood. Each household prepares its own land by digging our weeds and bushes with the hoe and digging stick. The uprooted vegetation is either saved to construct dams, or wind breaks, or it is left to dry in the sun and then burned. Fences, dams, and terraces are also repaired at this time.

In late April or early May, depending on environmental conditions, the actual planting of the crops begins. Although plots vary in size, they generally average an acre. The plot is first paced into 4 strips varying between 12 and 14 paces in width. The planter starts at the far end of one strip and drops seed in transverse lines spaced about 4 feet apart on the strip. Holes are dug deep to allow water to reach the roots, to give a good root system and to protect the seeds from predatory animals. From 15 to 20 seeds are dropped in each hole. Actual planting time varies according to the number of workers involved. Usually there are working parties which go from field to field. The Hopi practice intertillage, where beans, squash, and melons are planted in alternating strips. Intertillage also occurs in association with corn fields or on separate plots designed for other plants.

The Hopi method of hill planting and cultivating is quite different from the rows of closely spaced corn used by the modern farmer of the American Corn Belt. The hill method, which gives a low yield per acre, is better suited to the Hopi water supply and technology than the thick spacing methods.

Cultivation begins with the appearance of the young plants. Soil around the young shoots is kept loose and weeds are hoed out. Unprotected shoots are saved by the construction of windbreaks. Hills that fail to germinate are replanted. Weaker shoots are pulled out to conserve water. Cultivation continues until the plants are mature, and as they reach this point, continuous watch is kept for predatory animals. Scarecrows are placed in the fields. Huts are erected to house a guard at plots away from the village.

Crops are harvested in late September and October and the harvest is accompanied with much feasting and joy. The work is accomplished mainly by a working party. Beans, squash, and melons are harvested before the main crop. When corn is harvested, the ears are removed from their stalks, placed in baskets on burros, and carried to the village where they are husked, dried and stored in bins. Corn stalks are cut down and kept as fodder. Sweet corn is roasted in the fields at the time of its picking.

The Hopi have a remarkable knowledge of the resources of their region, and during the yearly economic cycle they often travel long distances to procure plants, pigments, wood, and salt as they are needed. Today, the Hopi have an intense interest in any new crop. Seeds are obtained by purchase, inheritance, or through trading at stores or from friends, Indian Agents, mail order houses, and nurseries. Approximately one-third of all seeds are obtained from sources off the reservation.

Animal husbandry. Among the animals kept by the Hopi, sheep and to a lesser extent, cattle, have recently come to play an important part in their economy. Sheep and cattle raising were borrowed from the Spanish. Sheep tending is a male occupation, and has become the main support of some households. In general, those men who have herds divide their time between the herding camps and their homes in the village. Flocks are small and are mainly kept as a source of wool and, on occasion, meat. Shearing and dipping involve cooperative labor, and are carried out by small working parties of men and boys. Yearling cattle are branded in August, the work involving household or kin cooperatives.

Hunting. Today the Hopi mainly hunt rabbits, eagles, and coyotes; although in the past, when pasturage grass was more plentiful, they hunted the wolf, deer, and antelope. Hunting offers little in the way of food and serves as a break from the monotonous routine of daily agricultural activity. Formerly, the hunt was more significant in their economy, for animals were hunted for their skins and as a source of food.

Crafts. For the most par, craft activities are carried out during winter months, although whenever the need for specific items arises, time is taken off from regular duties. In general, men spend their spare time carving kachina dolls, working with leather, or weaving, while the women make baskets and pottery. Other items manufactured during spare time include rattles, bullroarers, drums, flutes, and gourd trumpets.

An element of specialization may be noted here, pottery being made on First Mesa, and basketry on Second and Third. The manufacture of pottery, although once abandoned, has recently become an important industry among the women, and its sale to visitors is an important adjunct to the economy.

Distribtuion of wealth. The primary unit for the consumption and distribution of goods is the economically self-sufficient household group. Although most of the goods that are produced by this unit are used to satisfy the needs of its members, some must be set aside to fulfill those obligations that arise from kin and clan association, to pay for hired services, and to obtain items through barter and exchange. Goods are distributed through personal and religious ceremonies, gifts and forfeits, and trade.

Birth, naming and initiation and marriage are all means of distributing native wealth. Birth and naming ceremonies serve to initiate economic ties between paternal and maternal relatives and the respective individuals. The individual has a lifetime obligation to those who brought him into the world and included him as a member of their group. Although initiation is a mechanism by which an individual enters a ceremonial group, it also established a complicated pattern of gift-giving, gift-return, and economic obligations. Marriage established relations by a transfer of gifts and the establishment of economic obligations between the two married persons and the kinship groups to which they belong. For the girl and her family, marriage strengthens the household wealth, for her husband transfers his services to the clan of his wife.

Religious ceremonials serve as incentives to increased production and distribution of wealth items. Religious festivals are financed in two ways. First, those households who have members participating in a society cermonial collectively provide food and provisions for the performers. Second, in the case of a ritual initiated by an individual, he alone supplies food and provisions for the ritual participants. Distribution of wealth through economic debt is also characteristic of some rituals.

Distribtuion of goods is furthered by gift exchange and the payment of forfeits. Gift exchange, as alluded to in the preceding paragraphs, is a very important part of the give and take of daily life, and is extended to include inter- and intra-village visiting and the associated hospitality. In all cases of exchange, every member involved in the transaction is aware of what is expected of him. There are no gifts or services rendered without some kind of reciprocity.

The payment of forfeits is part of a game system wherein the loser of a particular game pays the winners. Payments depend on the game played. This system serves as a mechanism for transferring wealth from one individual or household to another.

Trade. Trade differs from gift exchange in that custom places a particular value on a tradable commodity, but the value at which it is sold is largely a result of bargaining. Among the Hopi, trading is carried out on three levels: intra-village trade, inter-village trade, and trade with other tribes.

Trade within each village is not carried out on an organized basis because each household is largely self-sufficient and produces the same items as its neighbors. Private trade does occur, the commodities usually being food, ornaments, and crafts.

Inter-village trade usually takes place on visits to other villages. Sometimes trading expeditions are pre-arranged so that all who wish to participate may prepare their tradable items.

Traditionally, intertribal trade was of great importance, and it appears that at one time the Hopi had trade relations with the Pueblos of Zuni, Cochiti, and others, all of which acted as a medium through which the Hopi came into indirect contact with the people north of Mexico and the southern plains. Much of the intertribal trade that existed in the past has disappeared with the coming of trading posts manned by Anglos and with the extinction of tribes on the traditional trading chain. Currently, most of the intertribal trade is conducted with the Navajo, Zuni, and the Rio Grande pueblos.

Kin, Clan, and Family

Kinship is the most important integrating factor in Hopi society, for it largely determines the pattern of interaction among its constituents. Kinship is reckoned through the female line, and it is grouped through clan affiliation.

Each clan is composed of one or more matrilineal lineages and may be considered as a judicial, ceremonial, and economic unit. The internal organization within the clan is relatively simple. It consists of a female head, who is called the Clan Mother, and her brother, the ceremonial clan head, who live together in a house, regarded by the clan as the ancestral house. The Clan Mother is incharge of the clan fetishes,and, in addition, is theoretically the judiciary of intra-clan disputes. The ceremonial head is chief of the ceremony which the lineage performs and represents the clan (and lineage) in secular councils. Kinship terms are extended to all clan members.

The lineage(s) of which the clan is composed consists of a female head, her brothers, her sisters, and the sisters' sons and daughters. The lineage generally locates itself in households near each other. Those males living in these households by marriage are not included in the clan.

Each clan maintains a close relation to a natural or supernatural phenomenon, represented by a fetish which is kept in the ancestral house and whose care is charged to the "Clan Mother." In return for certain performances deemed by the Hopi as propitiatory, these natural or supernatural partners are believed to reciprocate with mutually equivalent services. Some clans maintain an association with fetishes which are owned by other clans and consider themselves related to the latter. Clans which are thus related through mutual interest in totems are exogamous and constitute the largest kinship groups.

The Hopi family household acts as the primary unit of production and consumption, for all its members, both paternal and maternal, contribute some small part to its welfare. Arranged on the basis of matrilocal residence and matrilineal descent, the family is composed of father, mother, children, married sisters with their husbands and children, the mother's unmarried sisters and brothers. As a unit the family is relatively stable. The father is responsible for training his son in domestic affairs, and with the aid of his kinsmen assumes the major role in the training of economic activities. Boys join their fathers in the fields to learn the proper methods of field preparation and control, and the care of livestock. The mother's brother is responsible for his sister's son's ritual and ceremonial training, and is the chief disciplinarian. Girls also learn their respective roles by the same process of association and imitative absorption from their mothers.

Magico-Religious System

Belief and ethics. The Hopi have a very original and integrated theory of the universe, for they see everything as being interrelated and mutually dependent on the law of reciprocity. All things cooperate in an orderly fashion, for the good of all. According to this law, everything has a definite role to fulfill. Non-human things fulfill their roles automatically, but man must learn his roles and responsibilities and carry them out. These rules form an ethical code which is taught to every Hopi child, and determines how he is to act all through life. His success in life along with the welfare of his tribe depend upon how well he follows these rules of acting, thinking, and feeling. By following the rules closely, the Hopi believe that man can control nature to a limited extent.

Control of nature, made possible by magical mechanisms which are brought together to form a ceremonial system, is very important to the Hopi. His life depends upon the sun, the rain, the growth of crops, and a good harvest. Each ceremony is owned and given by a secret society composed of a chief who is at the same time the ceremonial head of a certain clan, together with certain members of the community who have undergone special training. Membership is not limited to those related to the clan, and is open to those meeting the society's qualifications. In addition, through its control of a particular ceremony, the clan also controls forms of diseases, and in the sense that it can cure, also acts as a specialized form of medicine man.

Ceremonial system. Hopi ceremonials are closely related to a fixed calendar based on solstitial observations performed by a chief crier who notes the position of the sun as it rises or sets on the horizon. This calendar also serves to determine the agricultural cycle. The ceremonials may be divided into two main groups: Kachinas and Nine Days' Ceremonies. The Kachinas can best be discussed from the standpoint of Hopi belief in life beyond the grave. Souls originate in and return to an underworld, which compliments the upper world. Two gods, the Sun and Earth gods, rule the underworld, and are the parents of all clans. They have the power to provide for all the needs of the living Hopi. The spirits that inhabit the underworld are deceased Hopi and they live in dwellings similar to those on the earth's surface. They also perform similar ceremonials. Those that bear the same clan name may be grouped together as "families" of spirits and are maternally based. These spirits are impersonated and prayed to by active dancers so that they may intercede for the living Hopi and secure the power that the gods of the underworld possess. The Nine Days' Ceremonies, on the other hand, are those which have no participating Kachina.

The Hopi ceremonial cycle begins in November, during which time old fires are extinguished and new ones built. Fire is considered to be a living entity; the creation of the new fire represents making new life. In December the pivotal Winter Solstice Ceremony (Sovaluna) is performed. All clans meet in their respective kivas, offer prayers to the germ god, and dramatize the sun in the form of a bird. The Hopi world view is also reinforced through dramatization of the tribes' emergence from the underworld. In January, the coming of the Kachinas is celebrated by clan ancients of two clans. The Buffalo dance, a foreign addition to the Hopi ceremonial system, is conducted. February marks the return of the Kachinas. The Powamu is one of the most elaborate of the Kachina festivals, for in addition to celebrating the return of the Kachinas it also serves to purify the earth for the ensuing planting season. In connection with this, beans are planted in superheated kivas and are removed on the morning of the last day, at which time they are distributed by the Kachinas to the children. During the months of March through June, rites are carried out illustrating the need for rain and the growth of good crops. Masked impersonations of different clan ancients are presented, each lasting usually one day and accompanied by secret rites. The Nima Kachina held in July marks the departure of the Kachinas to their homes in the San Francisco Mountains. Gifts are given by the Kachinas to the children, many of which serve to symbolize the anticipation of a good harvest. During August, September, and October, more celebrations are held to further crop growth and the harvest. The cycle comes to a close in November as old fires are extinguished and new ones built.

Tribal Organization

Except in times of crisis, political organization is practically nonexistent. Each village has essentially a politically autonomous unit, composed of a village chief and the ceremonial leaders of the secret societies. Organization of these leaders grows out of the ceremonials. "Chief talks" are held to reaffirm the pueblo ceremonial organization, and to discuss successors to societal membership. This unit is not a law-making body, although it does exercise some disciplinary measures, usually through the Kachinas. Matters involving major infractions of the civil code are now handled by the Tribal Court, which was instituted by the U. S. Government in 1935.

The Tribal Council, of which the Tribal Court is a part, may be cited as an attempt by the Bureau of Indian Affairs to establish over-all tribal organization and political entity. The tribal constitution was written in 1935 and adopted the following year. It established nine political units grouped for the purpose of total representation in tribal affairs. However, as one might anticipate from the traditional pueblo patterns, this form of representative government has not met with much success. Pueblo organization on an inter-village basis is not possible as long as the old system survives.

Hopi Today

Today, despite increasing pressures of modernization, some Hopi favor the maintenance of the traditional "Hopi Way." Notwithstanding this, however, significant changes have occurred on the Hopi reservation since the inauguration of the Indian Reorganization Act.

The reduction of the Hopi language to written form has greatly facilitated improvements in education. Opportunity for education through the eighth grade is available on the reservation. Although attendance is not compulsory, Hopi leaders consistently urge all people to send their children to school. All reservation schools are adequately staffed and are equipped with modern teaching aids and materials. Those students who continue beyond the eighth grade attend federal boarding schools, public schools, or mission schools located off the reservation. By the end of 1963, 70 students were graduated from high school and it is estimated that by 1970 there will be an annual graduation of 95 students. Beyond the secondary school level, financial assistance is provided for those who wish to attend college and vocational school.

Although most Hopi attend and participate in their traditional religion, approximately ten per cent have become Christians.

Until the tribal Council was officially recognized in 1955, tribal organization centered around the traditional ceremonial system. Currently, the Tribal Office is located at New Orabi and consists of members selected from seven of the eleven villages. Each village is also independently organized and has either an hereditary or elected leader. Although the Tribal Council has been limited in its powers since it was first organized, it has met with some success especially since 1955. The accomplishments include the establishment of a committee to plan and administer an Overall Economic Development Program; a grant to the right-of-way for the building of three major highways to service the area; and enforced measures in sanitation and food-handling procedures.

One of the major areas of change has been in the shift from a subsistence to a cash economy, accompanied by an economic decline. Although approximately 80 per cent of Hopi families do subsistence farming, many seek employment in other communities as skilled and unskilled laborers. Some are employed by the government, while others own and operate small business concerns. As the Hopi area is not readily accessible to large U. S. markets or to major industries, the economic growth potential essentially rests on the development of markets for Hopi crafts and livestock.

The current and most promising program among the Hopi today is the Hopi Provisional Overall Economic Development Program, which represents a major step in the development of all resources in the Hopi Redevelopment Area. This program stresses the development of human and economic resources, as well as community organizations, and if successful by the end of the proposed term, may prove instrumental in realizing full participation of the Hopi in modern America

The study of the Hopi and other Pueblo Indians provides living materials through which archeologists can check their findings. These tribes have maintained much of their traditional culture, despite pressures of modernization. Much of what we have already discussed has been based on archeological data and verified by these living cultures. It stands to reason that continuing efforts on the part of archeologists and anthropologists will shed even greater light onto the aboriginal populations of North America.

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The Development of Man and His Culture: New World Prehistory

By

Marion J. Rice

Art Supervision: Juanita Skelton

The Hopi illustrated by Ysabella Wood

Publication No. 28
Anthropology Curriculum Project
The University of Georgia
Athens, Georgia

Pupil Text
Grade Two

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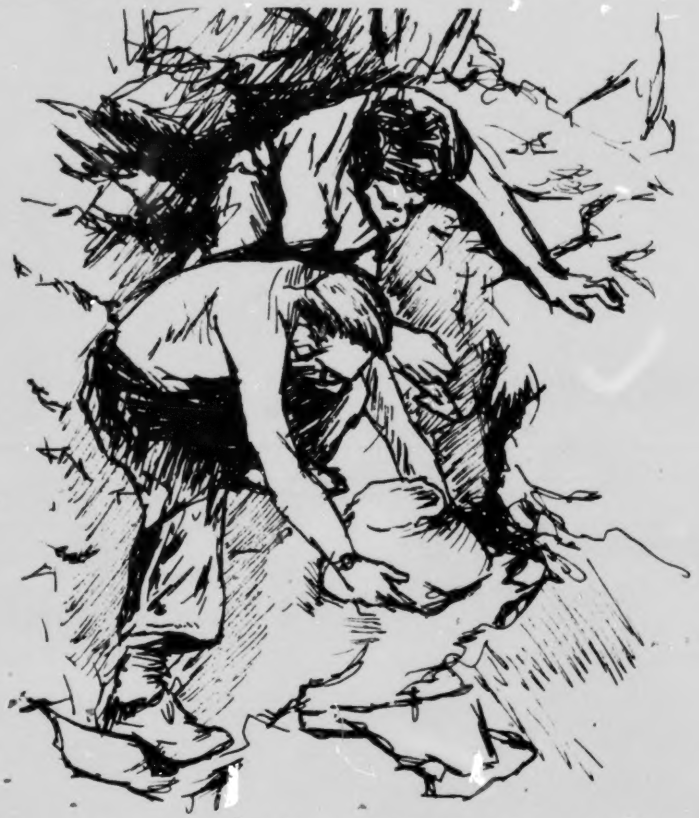


An Archeologist Finding a Pot

Chapter I

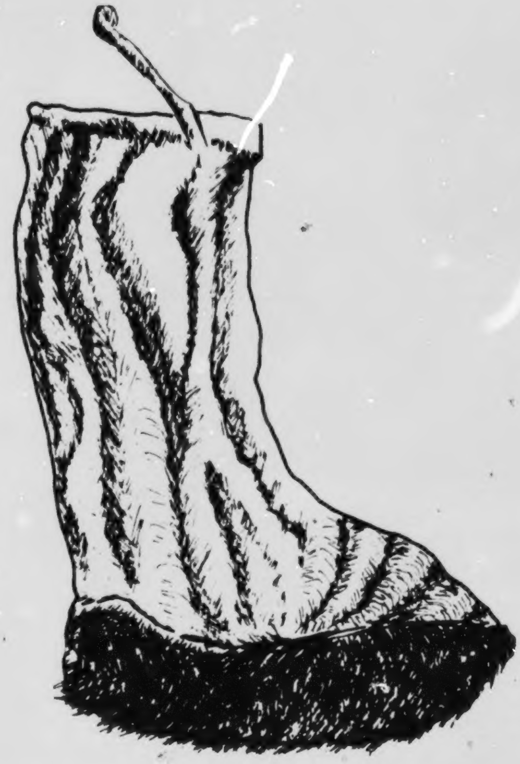
ARCHEOLOGICAL METHODS

1. AN ARCHEOLOGIST AT WORK

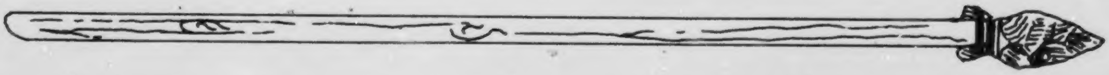
Archeology is the study of how man lived long ago. Scientists who study how man lived long ago are called archeologists.

An archeologist studies artifacts. Artifacts are things made by man. Everything that man makes is called an artifact. Pots, spearheads, houses, and clothing are examples of artifacts. Artifacts are found where man lived, worked, or hunted long ago. An archeologist learns how man lived long ago from artifacts.

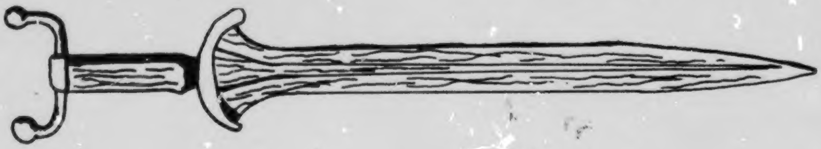
ORGANIC MATERIALS



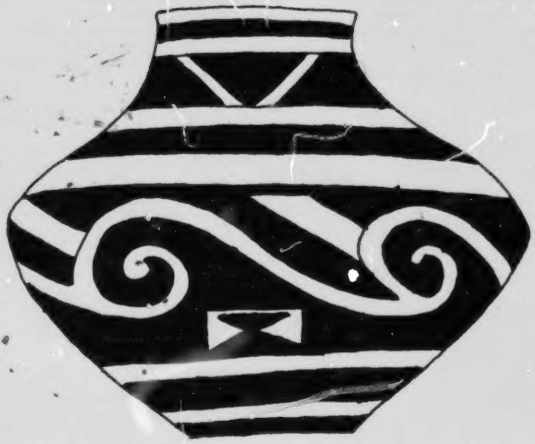
Eskimo Seal-skin Boot



Wooden-handled Spear



Metal Sword



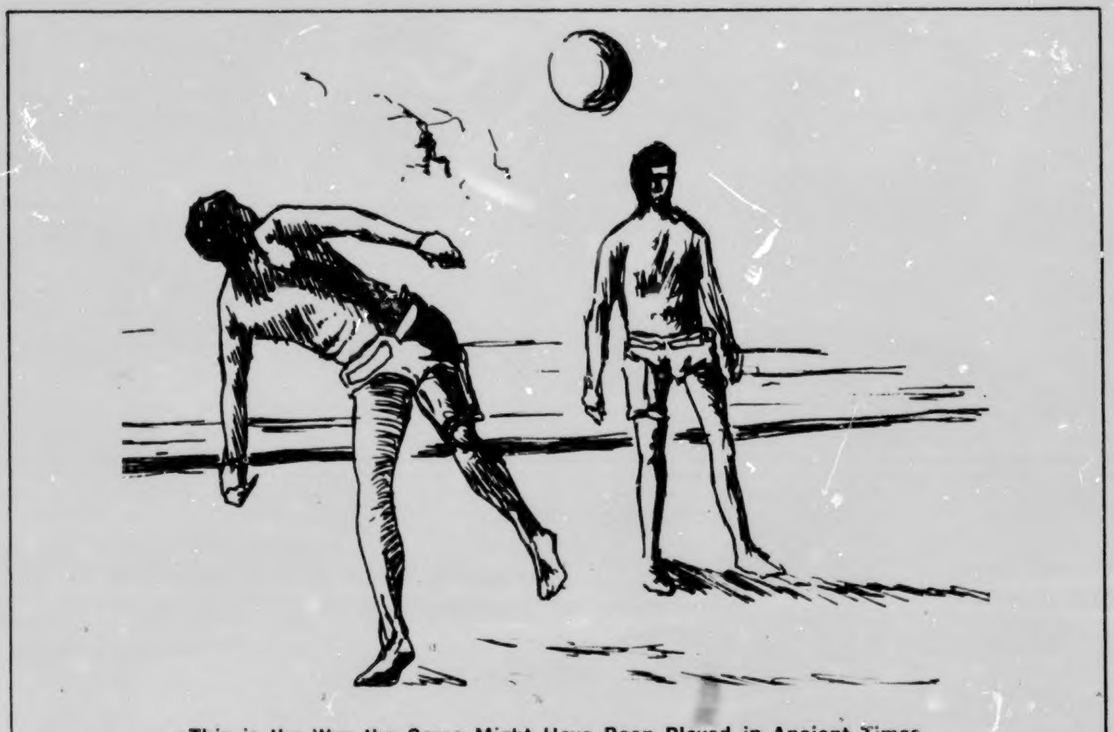
Clay Pot

INORGANIC MATERIALS

2. ALL ARTIFACTS DO NOT LAST THE SAME LENGTH OF TIME

Some artifacts last a long time. A stone axe and a spear point last a long time. These artifacts last a long time because they were made from stone. Stone is an inorganic material. Inorganic materials do not rot and decay. Some inorganic materials are stone, clay, and metal.

Some artifacts do not last a long time. Artifacts made from animals and plants do not last a long time. A leather shoe and a wooden spear handle do not last a long time. These are made from organic materials. Organic materials rot and decay. Artifacts made from organic materials do not last a long time.



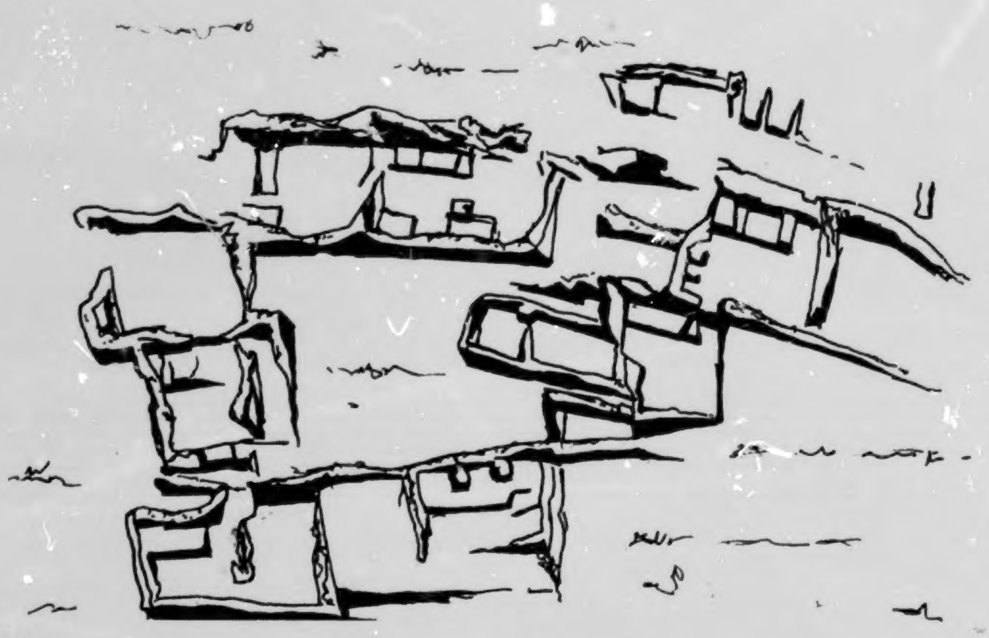
This is the Way the Game Might Have Been Played in Ancient Times

3. MAN'S CULTURE IS MORE THAN ARTIFACTS

Man talks, sings, tells stories, plays games. These are not artifacts. These do not get left behind. An archeologist cannot study ways of living that do not get left behind.

For example: In Mexico archeologists have found a place that looks like a ball court. They have found the rubber ball. These clues show they played a game. The clues do not show how the game was played. The clues do not tell how many players took part or the rules. The archeologist does not know all about the game.

An archeologist can use artifact clues to tell us about some of the culture. He cannot learn all about a culture from artifacts.



Airplane View of Ruined Village

4. THINGS GET PRESERVED IN MANY WAYS

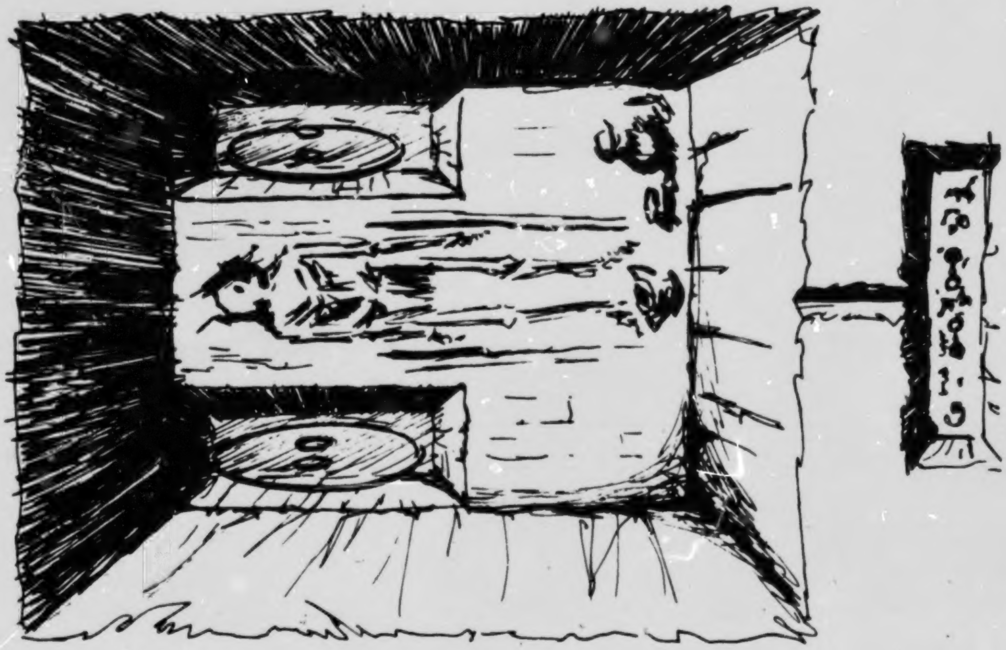
Preserve means to keep safe or keep from decaying. Artifacts that are preserved can be found.

Artifacts get preserved in many ways. Most things get preserved by getting covered up or buried.

Some things get covered up by chance. A water hole dries up. People must leave their village. The wooden roof rots and falls in. The wind blows dust and dirt. Walls crumble. After many years the village is turned into a mound of dirt.

Once men lived in caves. Men left artifacts behind. The cave protected those things from the weather.

Men also bury the dead. Artifacts are put in the graves with the body. Pottery vessels, shell beads, and stone weapons are found along with the skeleton.



A Man Buried with His Chariot

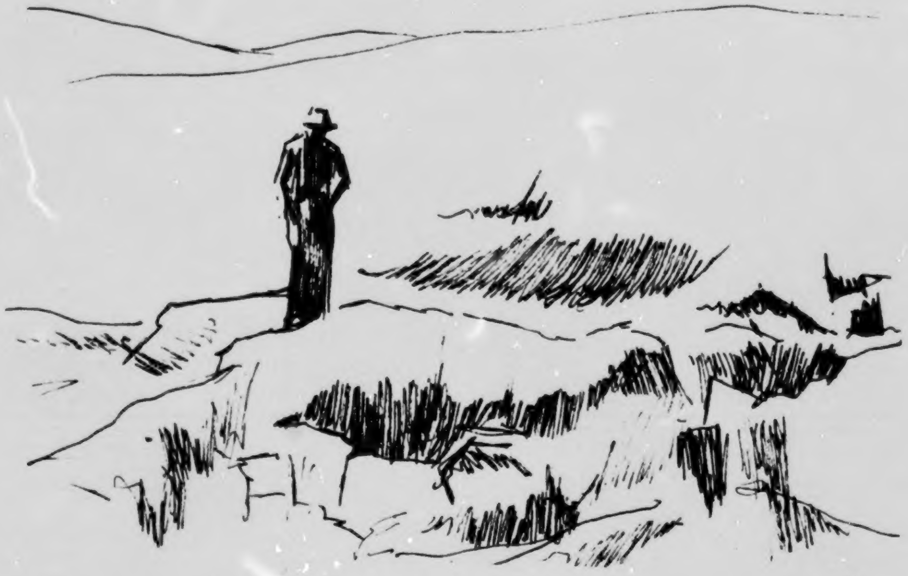
5. KINDS OF ARCHEOLOGICAL SITES

Archeological sites are places that man used. Man used places to do different things. The artifacts left behind show how he used the place. Archeologists look for artifacts in places that man used.

People lived in caves, camps, villages, and cities. People inhabited such places. A habitation site is where people lived.

A burial site is a place where bodies are put in the earth or in tombs. A cemetery is a burial site.

Archeologists also look for artifacts at sites where man held ceremonies, chipped stone tools, and killed animals.



A Desert Site

6. WHERE ARCHEOLOGICAL SITES ARE FOUND

Archeological sites are found wherever man has lived. Man has lived in deserts, jungles, forests, plains, and on water. The place man lived helps preserve or destroy artifacts.

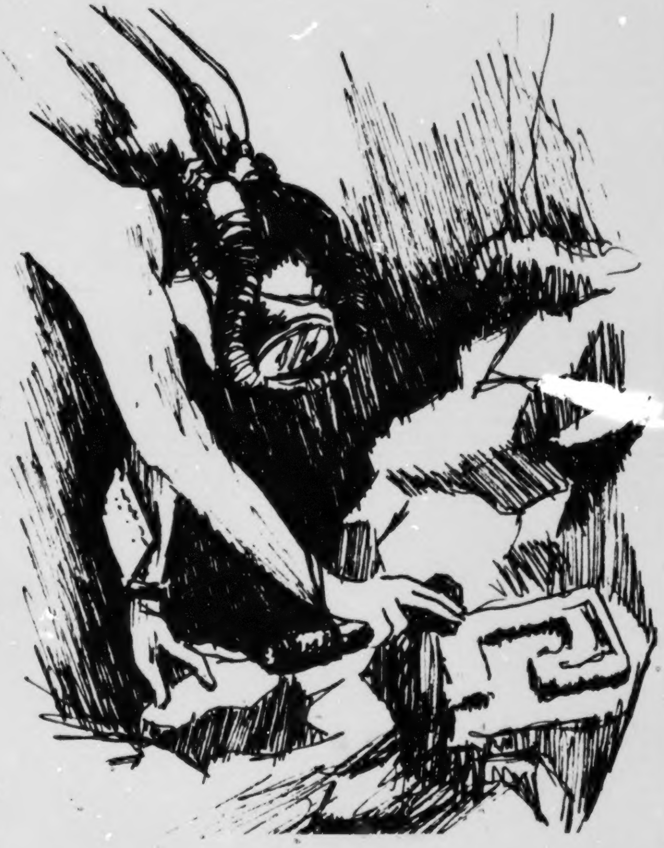
Desert sites provide good preservation. The climate is hot and dry. Organic material drys out. Some of the best preserved things come from desert sites.

We have many artifacts from the Near East. The weather is dry.

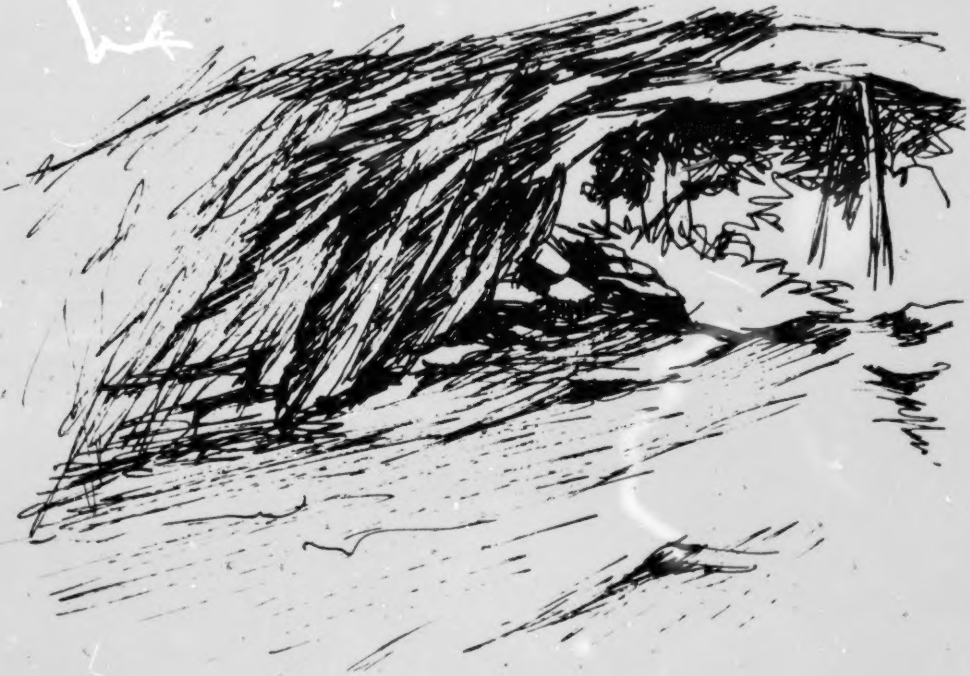
Tropical rain forest sites do not provide good preservation. There is much rain and heavy plant growth.

Cave sites usually have good preservation. The cave protects things left behind from the weather.

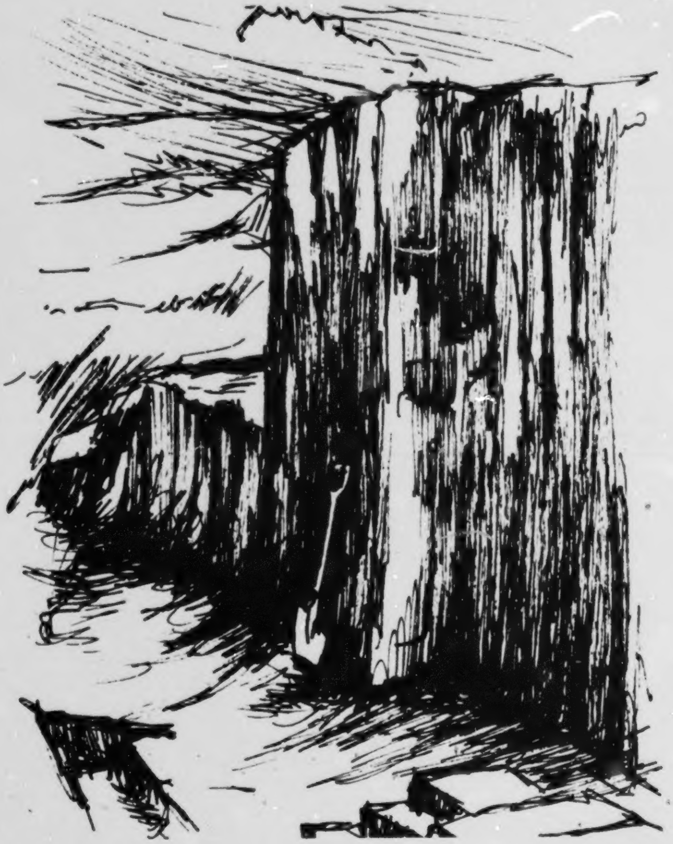
Other sites are found under water, in peat bogs, and in frozen areas.



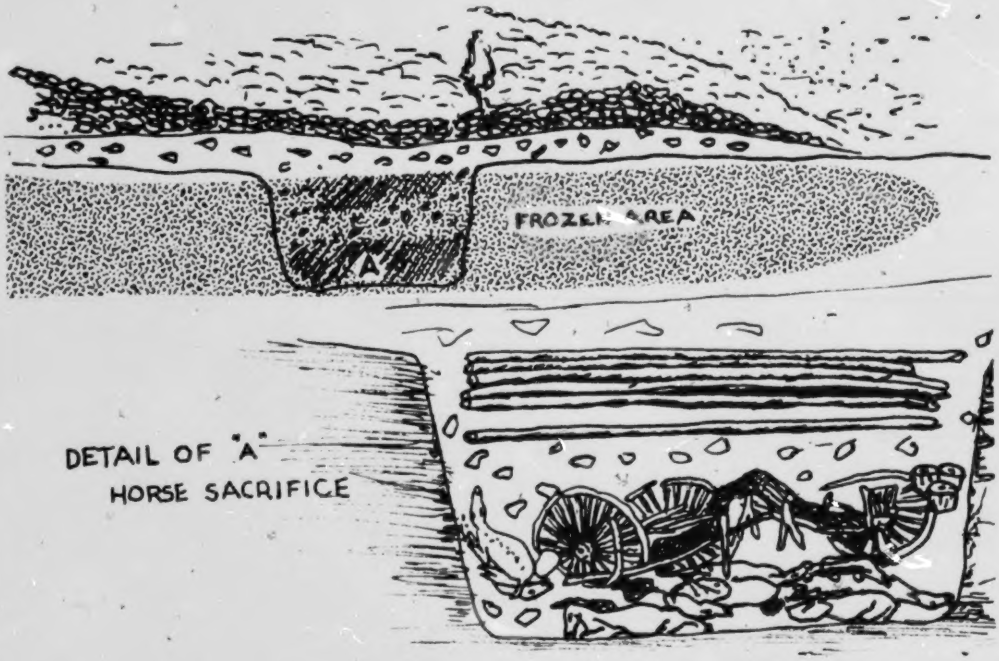
An Underwater Site



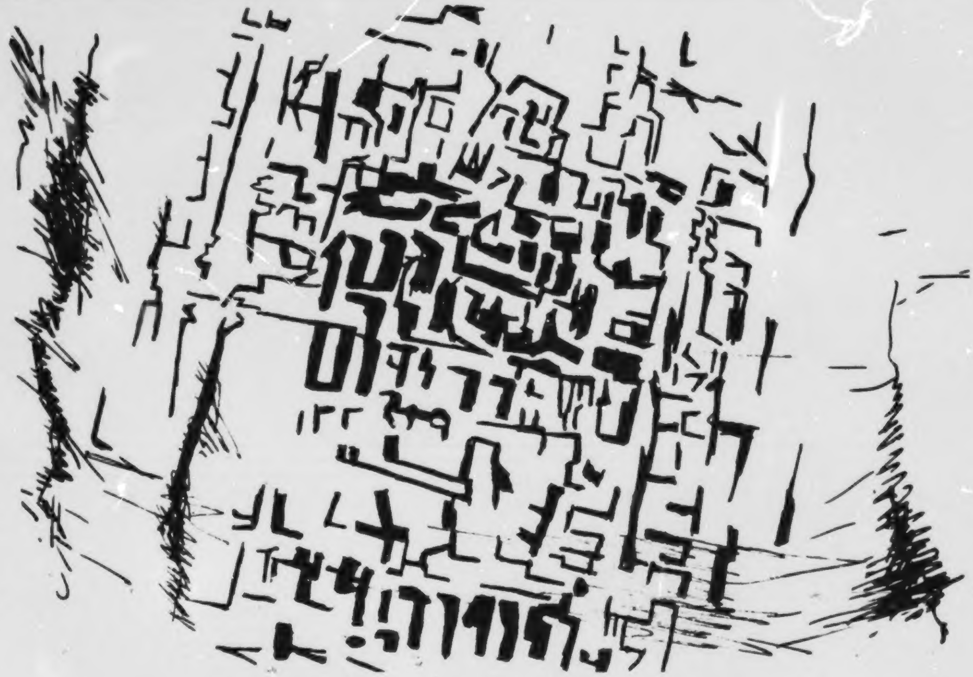
A Cave Site



A Peat Bog Site


FROZEN AREA
A
DETAIL OF "A"
HORSE SACRIFICE

A Frozen Site

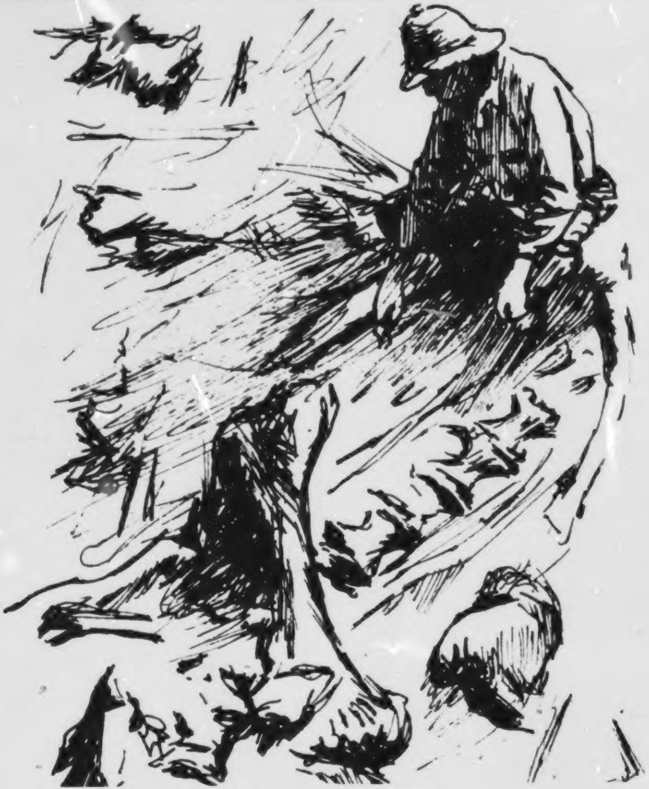


Airplane View of Ruined City

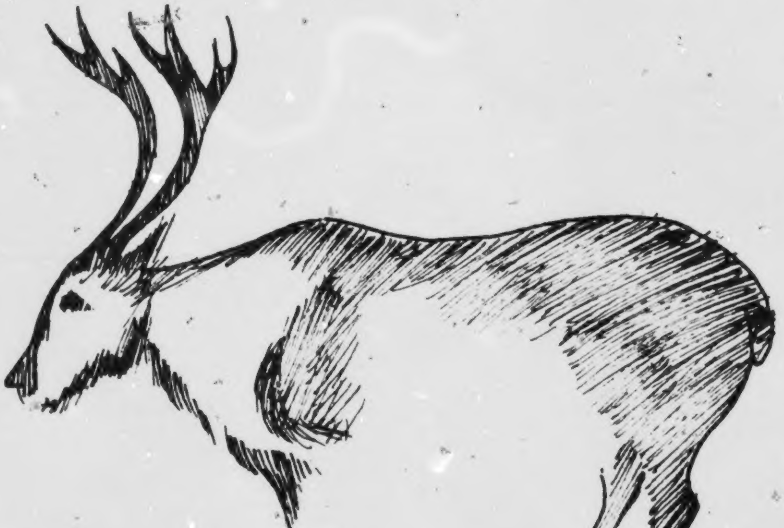
7. HOW ARCHEOLOGICAL SITES ARE FOUND

Archeological sites are found in many ways--by chance or accident, by changes in the land made by nature, by looking for sites, and by taking pictures from an airplane.

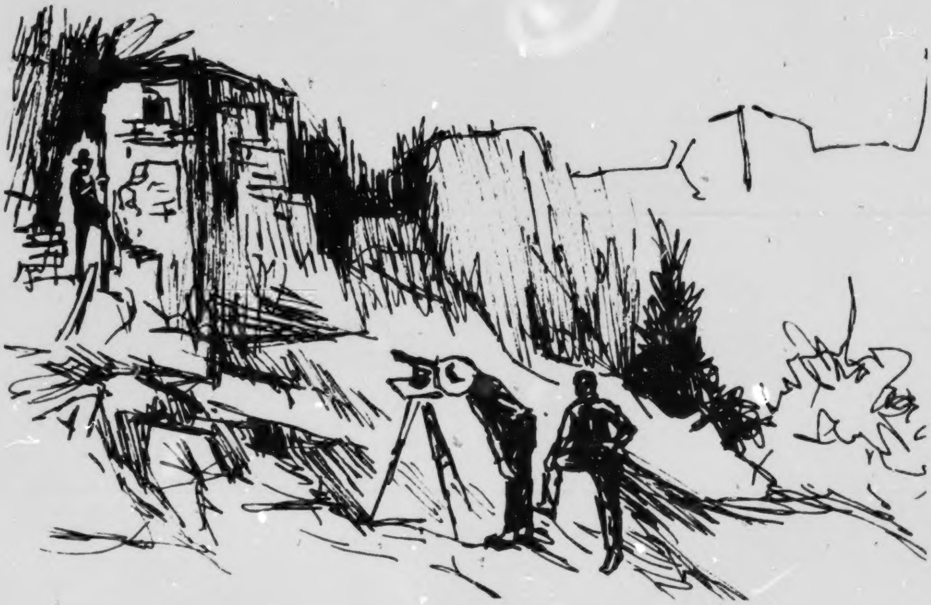
A good example of a chance find is finding the famous cave paintings at Lascaux in France. Four boys were playing ball. The ball went down a hole. Their dog went after the ball. The boys followed the dog. They went into a cave with old, old paintings. By chance the boys found these paintings.



Erosion Exposing a Fossil



A Cave Painting From Lascaux



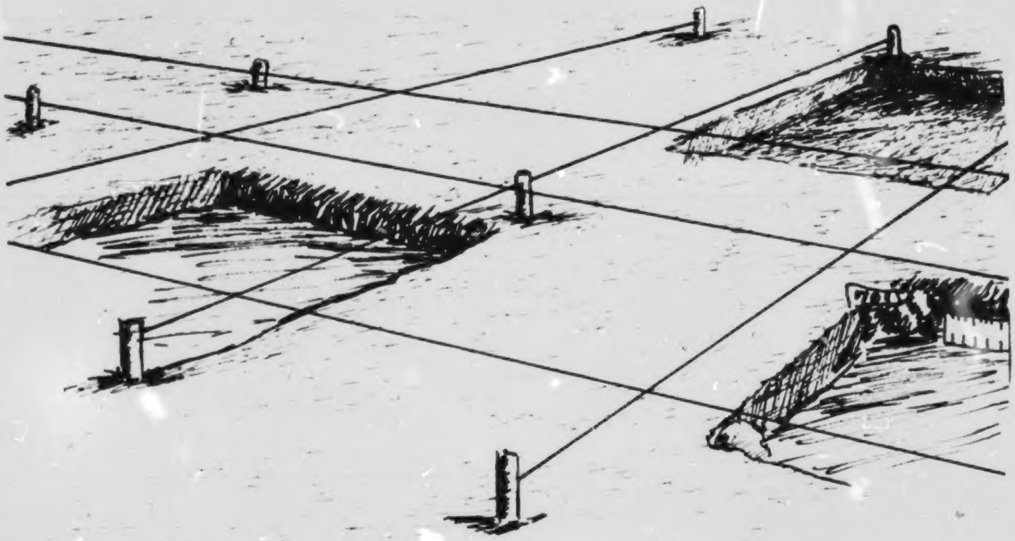
A Field Survey of an Archeological Site

8. PLANNING HOW TO GET INFORMATION FROM THE SITE

After a site is found, the archeologist does not just start digging any place. He wants to find out something about the site. This is called a field survey. A survey finds out about the site with little or no digging.

The archeologist goes over the site. He makes a map of the site. He decides how many men he will need. He plans how much it will cost. How much he does on the field survey depends on how much time and money he has.

The archeologist makes a report of the site. He may try to get money to excavate. Excavate in archeology means to uncover the site in a planned way. Digging out a site and finding out what is there is called an excavation. An excavation is also called a "dig." Excavations cost money.



A Site Ready for Excavation

9. EXCAVATION BEGINS AT A SITE

An archeologist excavates very carefully. He tries to find out all he can about the men who used the site. He must keep records to show what is found and where it is found.

The site is marked off into squares with pegs. Each peg is numbered. String is tied from peg to peg. The pegs and strings mark the site into squares. The squares may vary in size. From the top it looks like a big checkerboard.

Laying off the site makes it possible to put a tag on each artifact to show just where it is found.

10. METHODS OF EXCAVATION

After the site is laid off into squares, the site is excavated. Excavate means to dig out and remove the dirt.

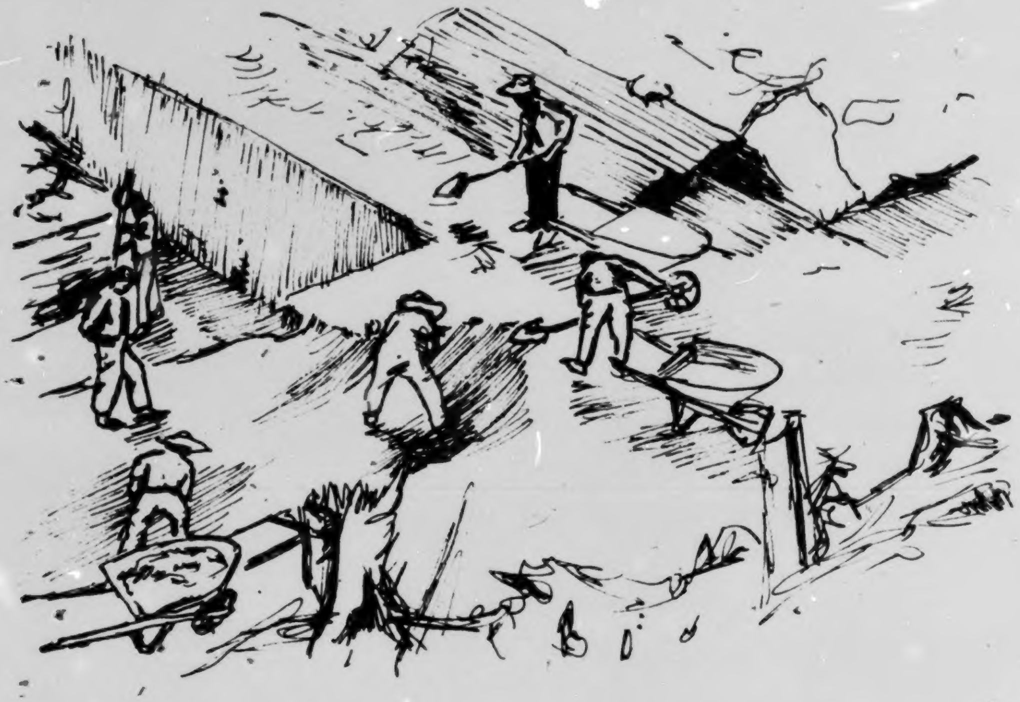
There are different ways to excavate. One or more methods of excavation may be used together. When many artifacts are found in part of a site, the part is dug out all the way. Some sites are totally excavated.

Trenching means digging a ditch through the site from the top to the bottom. It is a good way to find out the stratigraphy of the site. Stratigraphy comes from the word strata. This word means layers. A trench shows the number of strata or layers of material in the site.

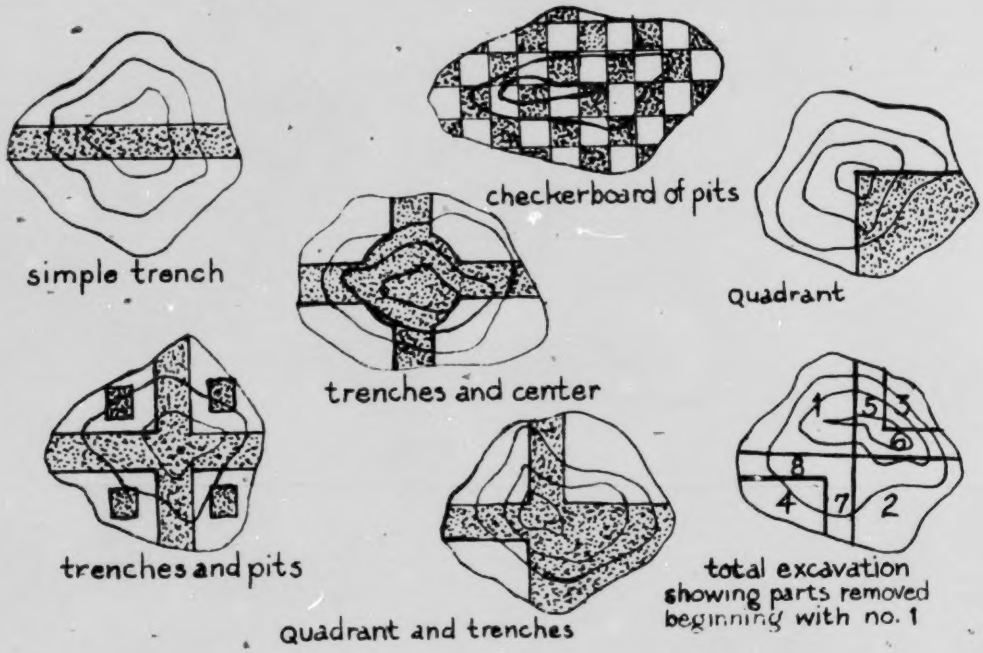
A checkerboard of pits is useful to dig out a shallow site. A pit is dug in every other square.

A quadrant is one-fourth. A quadrant excavation is digging out one fourth of the area.

Total excavation is digging out the entire site. Total excavation gives the most information.

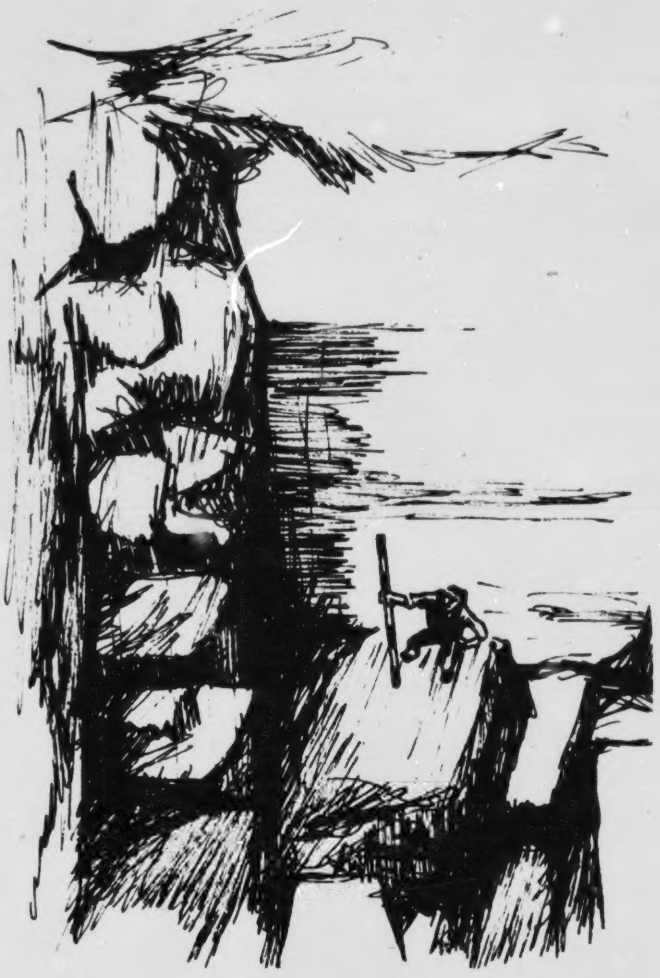


Rough Excavation With Shovels


simple trench
checkerboard of pits
Quadrant
trenches and center
trenches and pits
Quadrant and trenches
1
5
3
6
8
4
7
2
total excavation
showing parts removed
beginning with no. 1

Methods of Excavation

(The Darkened Area is Dug Out)

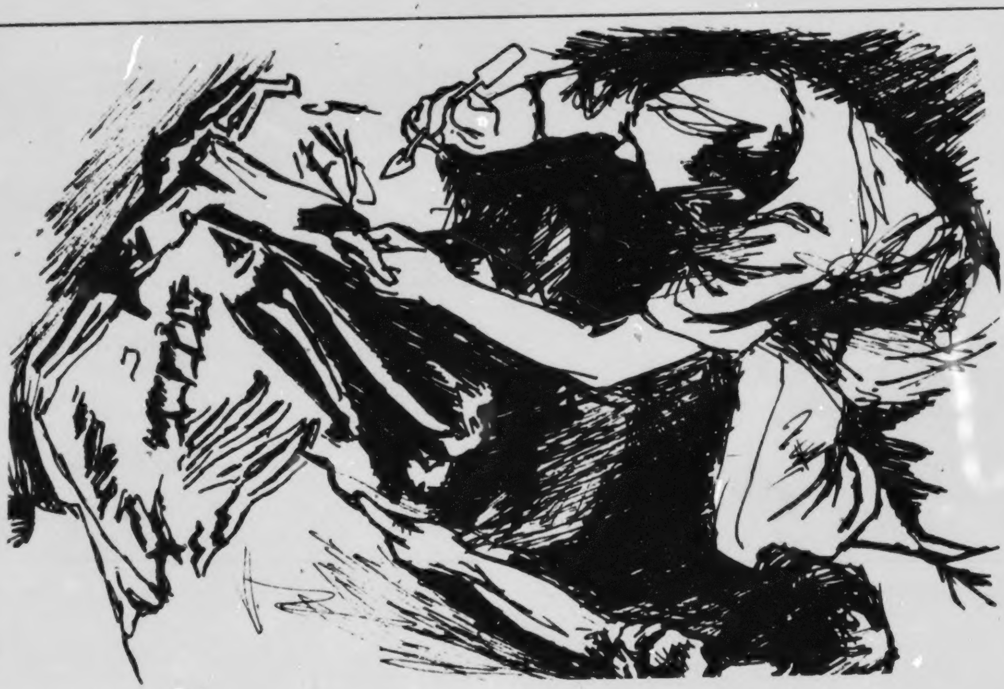


A Very Deep Site With Both Stepped Walls and Vertical Walls

11. HOW THE WALLS OF AN EXCAVATION ARE DUG

The way an excavation is made depends on the kind of soil. In hard soil, such as clay, the walls may be vertical. This means the walls can be dug straight up and down. The soil does not fall in.

In loose soils, such as sand, the walls are dug out like steps. It is wider at the top than at the bottom. This is a stepped wall. This keeps the walls from caving in. Stepped walls are also dug where there is heavy rain.

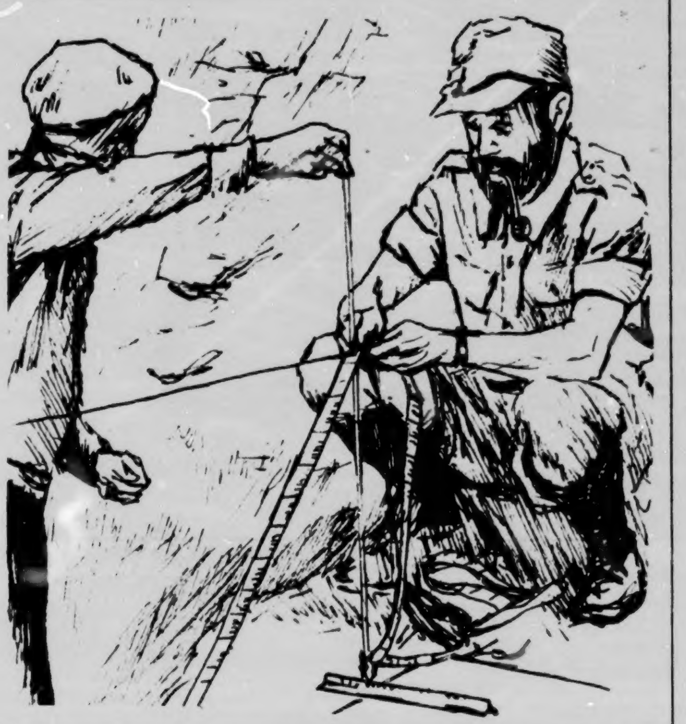


Fine Excavation

12. THE ARCHEOLOGIST USES MANY TOOLS

Many kinds of tools are used to excavate. A bulldozer may be used to move a thick top layer of dirt or stone. Most digging is done with a shovel. The dirt is carried away in a wheelbarrow or basket. The dirt is dumped through a screen. This helps to find small articles.

When an artifact is found, the archeologist uses fine tools to get it out without breaking it. The archeologist uses fine-pointed tools like an ice pick. He may use a spray gun to blow the dirt away. He may use small brushes. He also uses rulers or tape measures to get accurate measurements of the location of the artifacts. The archeologist wants to know what things go together.



Measuring the Location of an Artifact

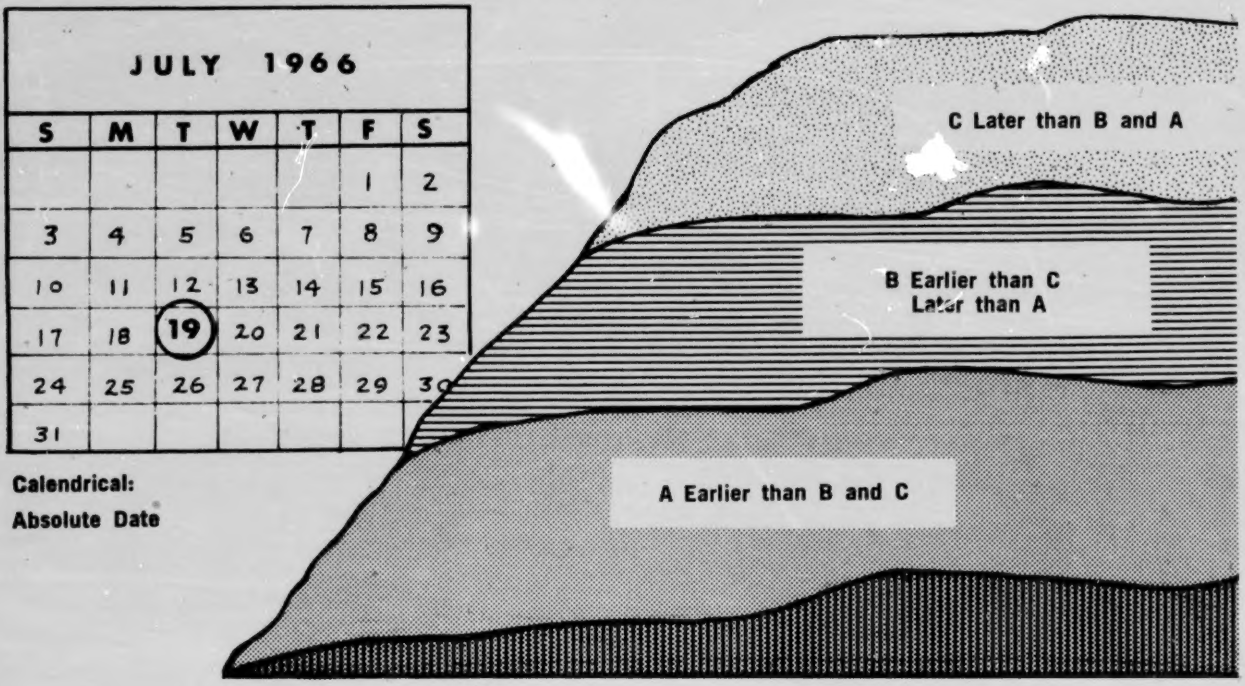
13. THE IMPORTANCE OF GOOD RECORDS

An artifact that is uncovered in an excavation is called a "find." There is much excitement when there is a find.

But good records are also needed. Where was the object found? In what square? In what layer? What things were found with it or near it?

This information is written in a notebook. A tape measure is used to make exact measurements. A measuring stick, marked in one foot lengths, is placed against the walls of the dig. A picture is made of the find.

The artifact is then numbered. It is taken to the laboratory for study. Or it may be packed for shipment to a museum for later study.


JULY 1966
S M T W T F S
1 2
3 4 5 6 7 8 9
10 11 12 13 14 15 16
17 18 19 20 21 22 23
24 25 26 27 28 29 30
31
C Later than B and A
B Earlier than C
Later than A
A Earlier than B and C

Calendrical:
Absolute Date

Stratification:
Relative Date

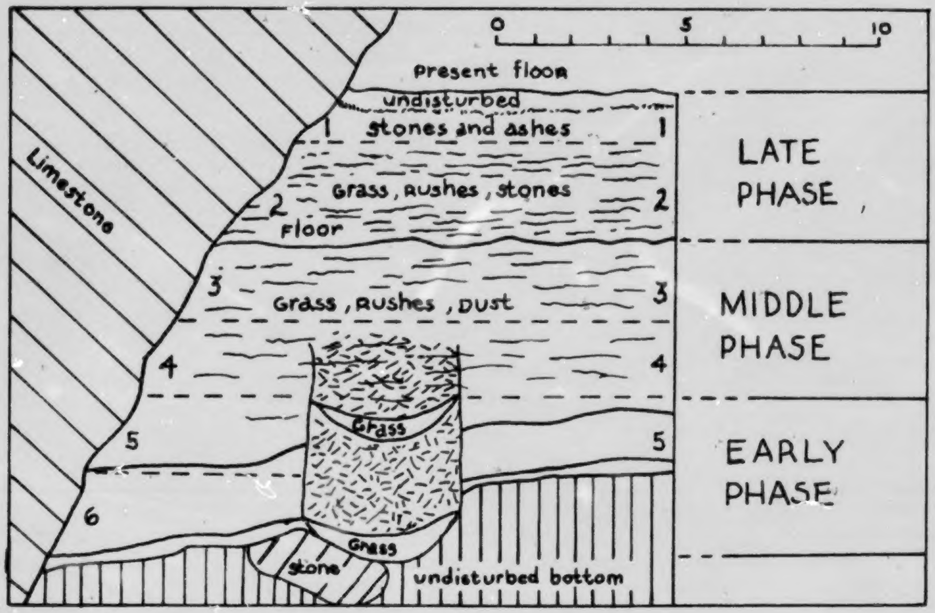
14. FINDING OUT THE AGE OF AN ARTIFACT OR SITE

An archeologist must know the age of a site or artifact. He must know the age to relate the find or site to other things in the past. Dating is very important.

The two methods of dating are absolute and relative.

Absolute dating gives a more or less fixed year, such as A.D. 1,000.

Relative dating does not give a fixed time. Relative dating can only say whether one object or site is older or younger than some other object or site. Stratigraphy is a method of relative dating. A knowledge of plants, animals, and rocks also helps in relative dating.


0
5
10
present floor
undisturbed
1
stones and ashes
1
Limestone
2
Grass, Rushes, stones
2
Floor
LATE PHASE
3
Grass, Rushes, Dust
3
MIDDLE PHASE
4
4
Grass
5
5
EARLY PHASE
6
Grass
stone
undisturbed bottom

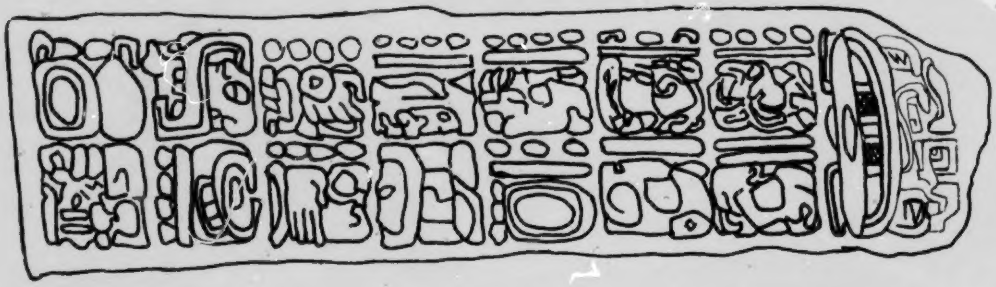
A Site With Many Strata

15. STRATIGRAPHY IN ARCHEOLOGY

The earth is not made up of the same kind of material. There are different layers of soil and rock. These layers are called strata.

An archeological site may have been used over and over again. Each time it was used a layer of trash and things was made. The oldest stratum (plural, strata) is at the bottom. An artifact found in the top stratum is usually newer than one found in a bottom stratum. Stratigraphy is one of the methods of relative dating.

Pictures are made of these strata.



A Mayan Stela on its Side with a Mayan Date on it

16. METHODS OF ABSOLUTE DATING: CALENDRICAL DATING

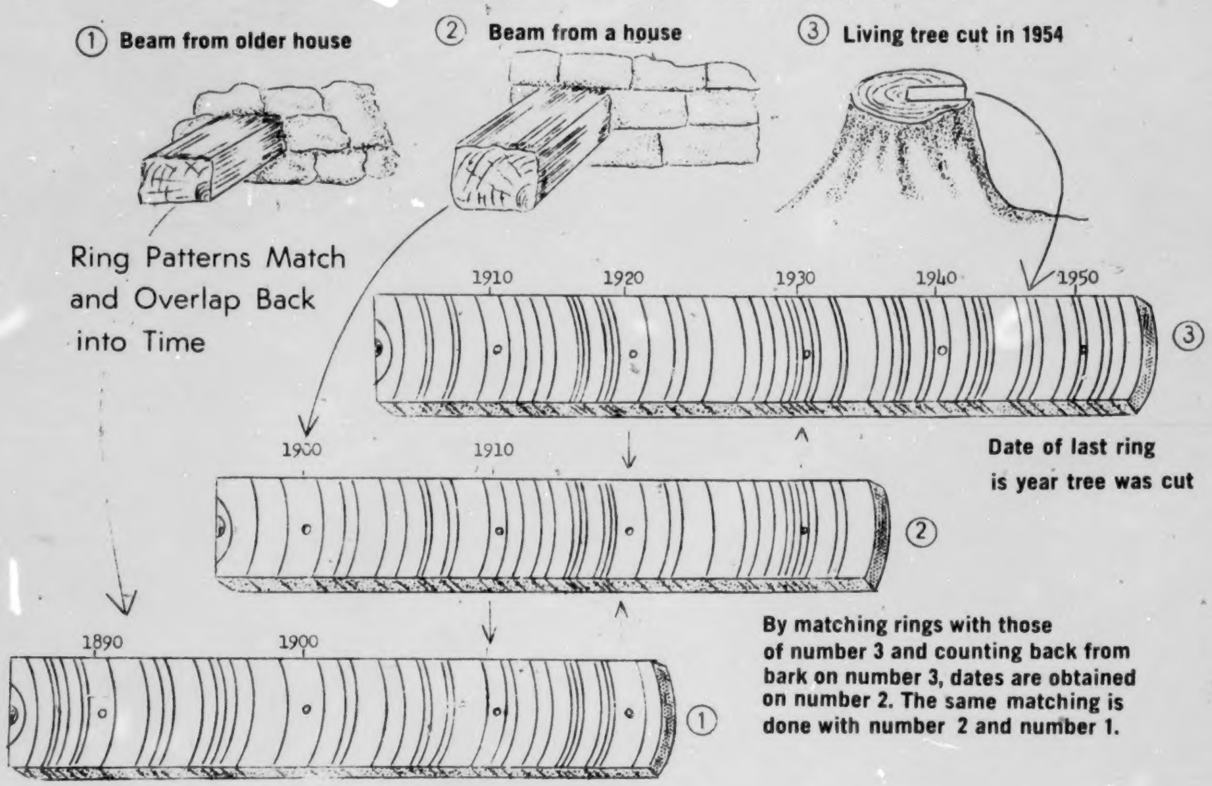
Absolute dating gives a more or less fixed date. Among the methods are calendrical, dendrochronology, and Carbon 14.

Calendrical dating is dating by a calendar. The problem is to take some other calendar and make the years the same as our calendar. The problem is to find the base year.

In the picture is a Mayan calendar stone. It is called a stela. A stela is a stone with writing. Also there are glyphs which stand for numbers. A glyph is a picture in the Mayan writing that stands for something.

It is thought that the base year in the Mayan calendar is 4 Ahau 8 Cumhu. It is thought to be the same as our calendar date 3113 B.C. Archeologists do not agree on this date. We cannot change Mayan dates to our calendar. Archeologists can read the Mayan numbers. They do not know how to read the calendar. Carbon 14 methods are helping to solve this problem.

DENDROCHRONOLOGY - TREE RING DATING


① Beam from older house
② Beam from a house
③ Living tree cut in 1954
Ring Patterns Match and Overlap Back into Time
1910
1920
1930
1940
1950
③
1900
1910
②
1890
1900
①

Date of last ring is year tree was cut

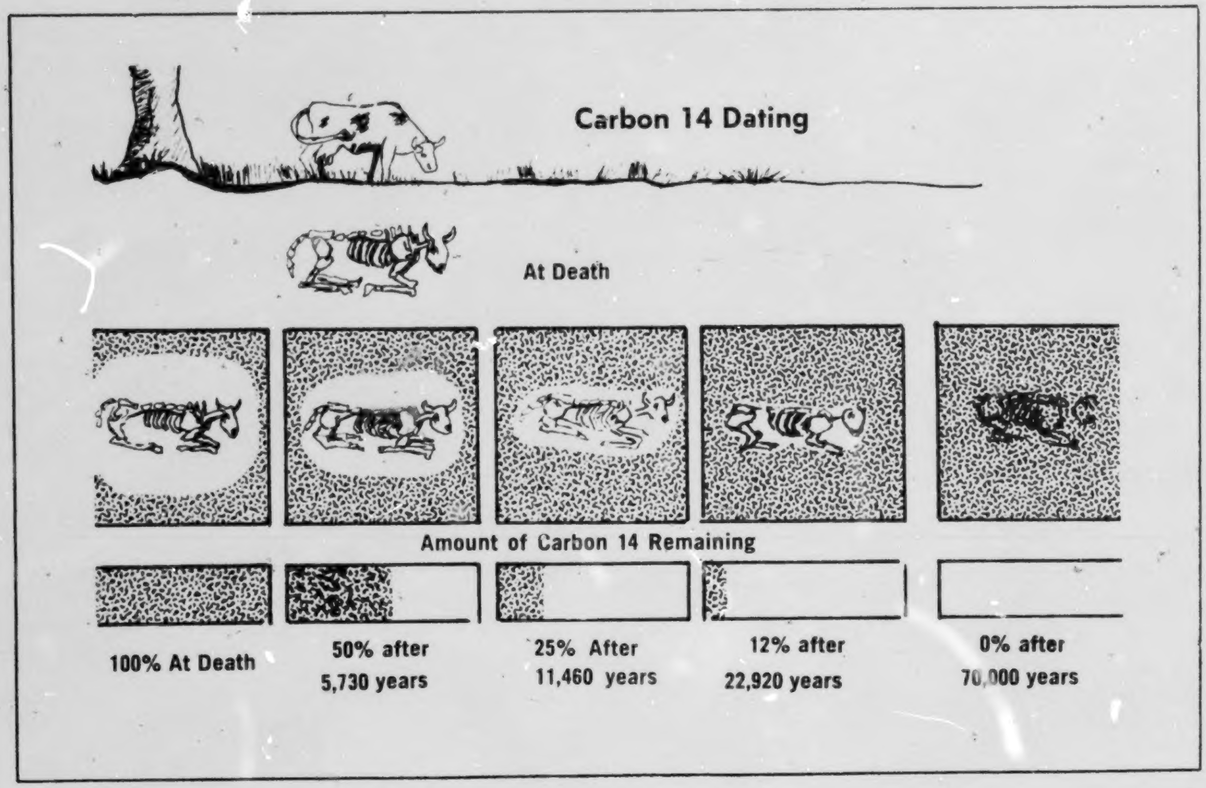
By matching rings with those of number 3 and counting back from bark on number 3, dates are obtained on number 2. The same matching is done with number 2 and number 1.

17. ABSOLUTE DATING: DENDROCHRONOLOGY

Dendrochronology is tree ring dating. Trees grow in rings. When the weather is dry, the tree grows very little. Tree ring dating works best where there are wet and dry periods.

Dendrochronology has been used most in archeology in the Southwest of the United States.

The picture shows how a piece of wood has been cut out of a living tree. The rings in this tree overlap with pieces from trees cut many years ago. In this way a series of dates has been set up. By matching pieces of wood with the wood in the series, the date can be found out.


Carbon 14 Dating
At Death
Amount of Carbon 14 Remaining
100% At Death
50% after
5,730 years
25% After
11,460 years
12% after
22,920 years
0% after
70,000 years

18. ABSOLUTE DATING: CARBON 14

Carbon 14 is a method of radio carbon dating. It is done in a laboratory. Much special equipment is needed. An archeologist does not do the dating. It is done by another kind of scientist.

Carbon 14 dating can be used on any organic (plant and animal) material. All organic material has Carbon 14. The older the piece of material, the less Carbon 14 it has.

Carbon 14 dating is the most used method of dating. It cannot date things older than 70,000 years. After that time, too much of the carbon has disappeared.

This method of dating can be used on such different things as parchment made from animal skins, charcoal, and fossil remains.

19. LABORATORY WORK

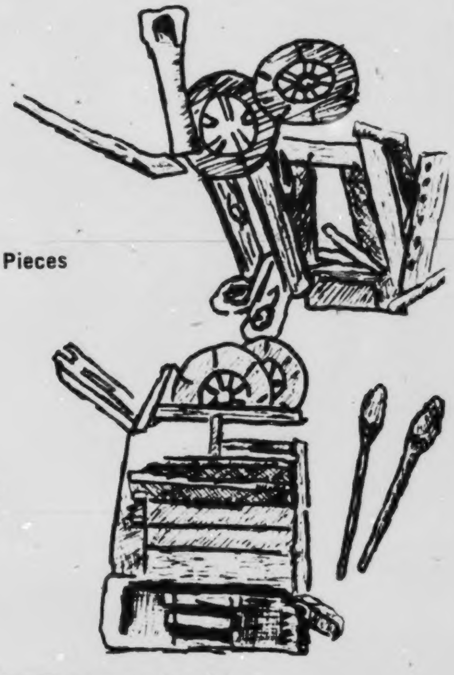
Laboratory work is important. This may be done in a laboratory at the site. Or, if the dig is not a big one, artifacts may be sent back to a museum laboratory. Important kinds of laboratory work are cleaning, dating, restoration, preserving, and description. Dating is part of the laboratory work.

Cleaning is done in several ways. Material which is not hurt by water, such as stone and pottery, is washed.

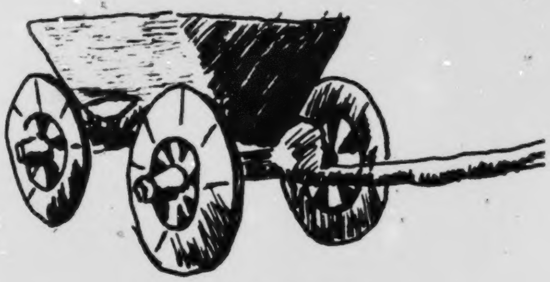
Restoration is taking broken things, or things that have come apart, and putting them back together. To restore an artifact is to put it back together.

Preservation is needed to keep things from falling to pieces after they have been excavated. Lacquer, glue, plaster of paris, and other materials are used to preserve artifacts.

In description, accurate information is written about an artifact in a record. Some of this is about the size and weight and the kind of material from which the artifact is made.

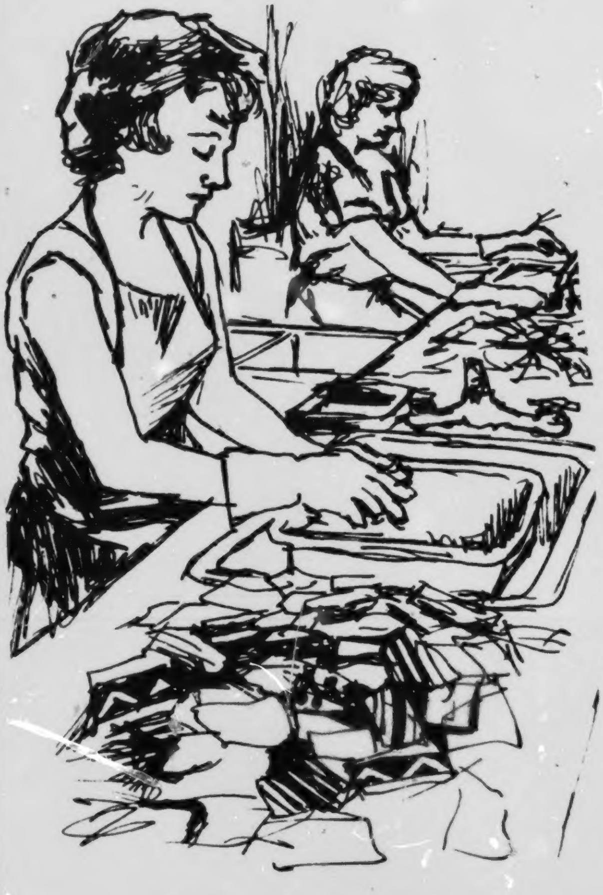


Pieces

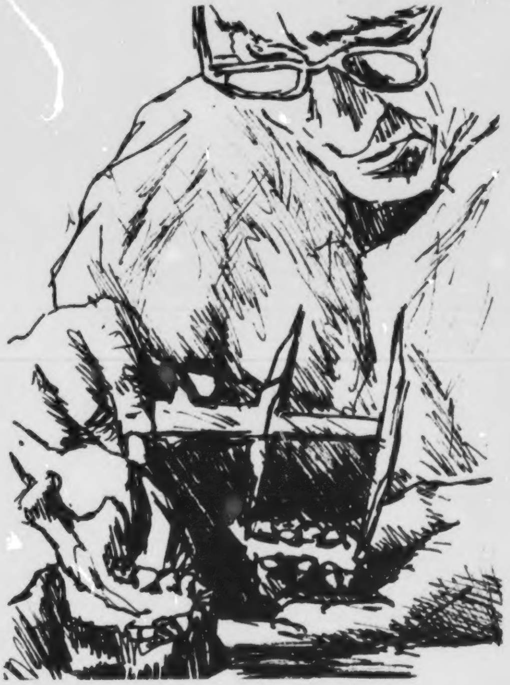


Restored Object

Restoration:



Technician Cleaning Pottery



Archeologist Comparing Two Jawbones

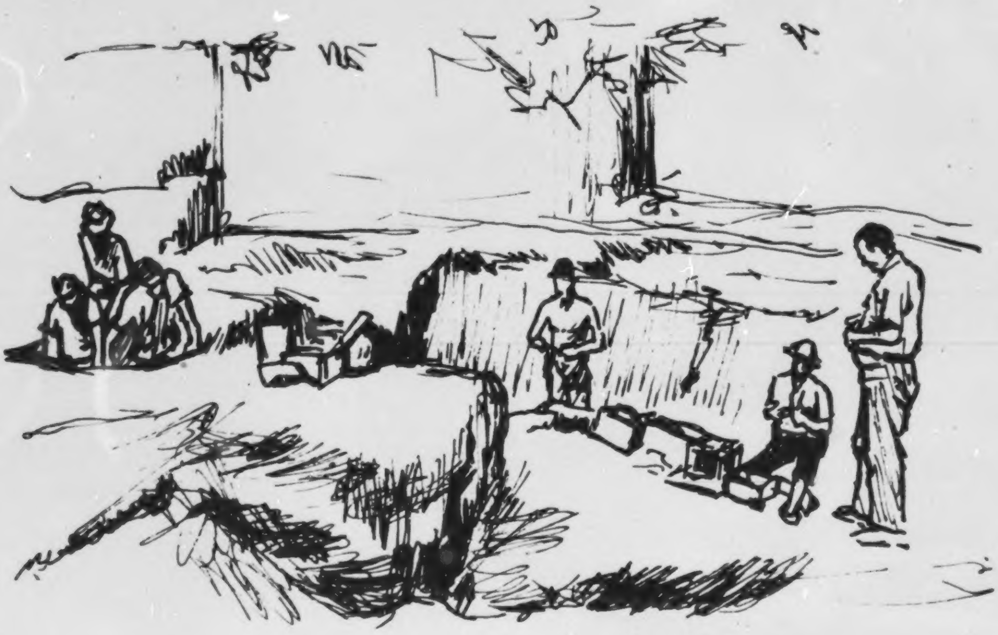
20. INTERPRETATION AND PUBLICATIONS

Archeological finds are merely clues. They must be studied. It is the archeologist who finds out the meaning of the clues. He can do this from knowledge of archeology.

An archeologist must always interpret what he finds. Interpretation is a most important part of his work. If he finds grinding stones, the people must have used grain or seeds. If he finds many artifacts with burials, the people must have believed in some kind of spirit world.

Then the archeologist must write about what he has found out. He must tell other archeologists what he has learned. He reports the results of his study. Publication in a magazine or book helps other scientists know about the excavation.

The same excavation can never be made again. But we have more knowledge as a result of this work.



The Archeologist on the Right is Supervising the Students

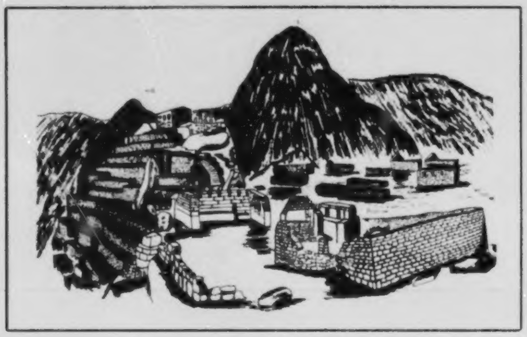
21. ARCHEOLOGY IS SCIENTIFIC WORK

One day you may find an archeological site. One day you may want to hunt for artifacts.

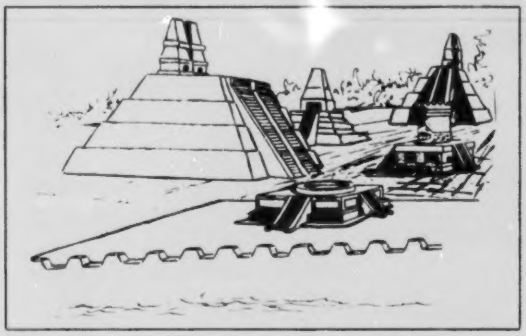
You should not try to dig yourself. Archeology is scientific work. You should report your find to your state archeological or historical society. The excavation should be made under the care of an archeologist.

Many high school and college students find archeology very interesting. In the summer they go on a dig with an archeologist. They help with the hard work. They also learn more about archeology.

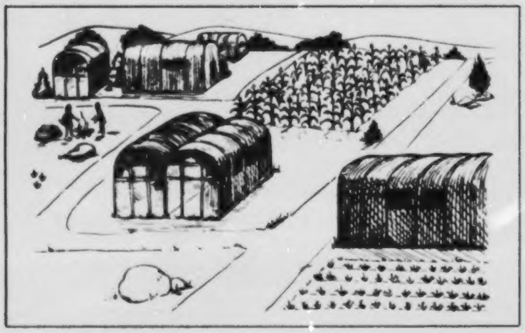
Perhaps one day you will want to help on a dig. One day you may help us know more about man's past.



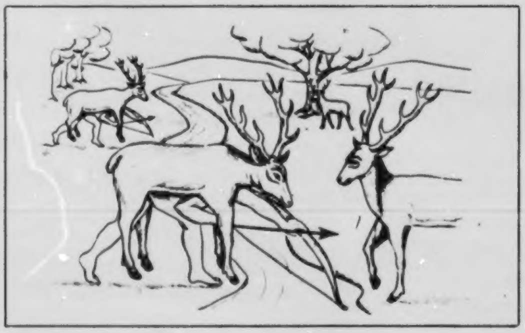
Post Classic Stage



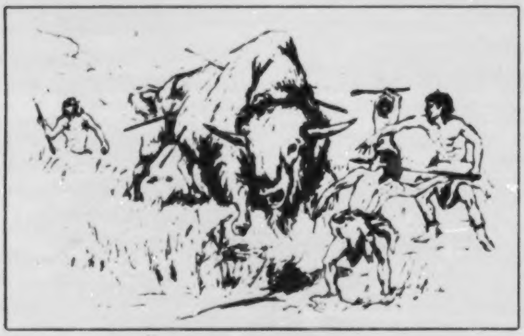
Classic Stage



Formative Stage



Archaic Stage



Paleo-Indian

Chapter II

NEW WORLD PREHISTORY

1. THE FIVE STAGES OF NEW WORLD PREHISTORY

The study of New World Prehistory is divided into five stages. A stage is a level of cultural development. The five stages are:

Paleo-Indian. This Indian was a hunter of big Ice Age animals.

Archaic Stage. This Indian hunted smaller game and gathered seeds, roots, and berries.

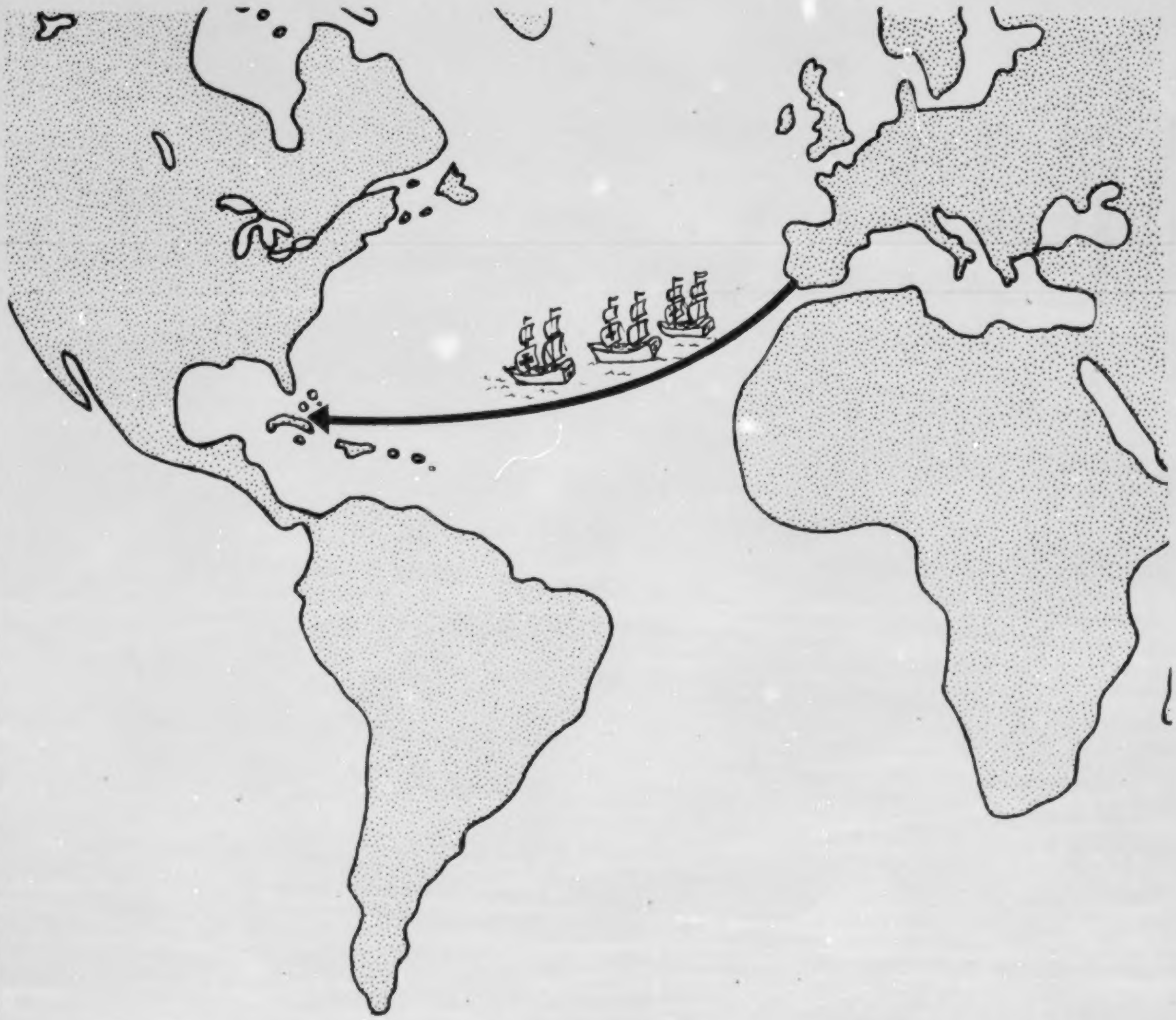
Formative Stage. This Indian was primarily a village farmer. In North America his main crop was corn (maize).

Classic Stage. This Indian lived in farm villages and had ceremonial centers.

Post Classic Stage. This Indian had military governments and built large cities.

The Eskimo and the Plains Indian do not fit these stages.

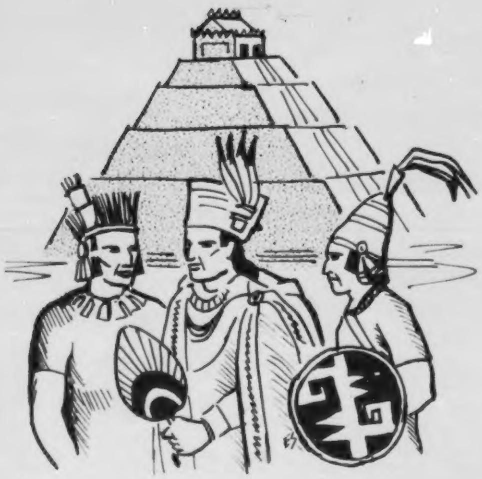
All five stages are found only in Nuclear America. Many Indians did not progress beyond the Archaic Stage. In the United States, most Indians of the Southwest and Eastern Woodlands reached the Formative Stage.



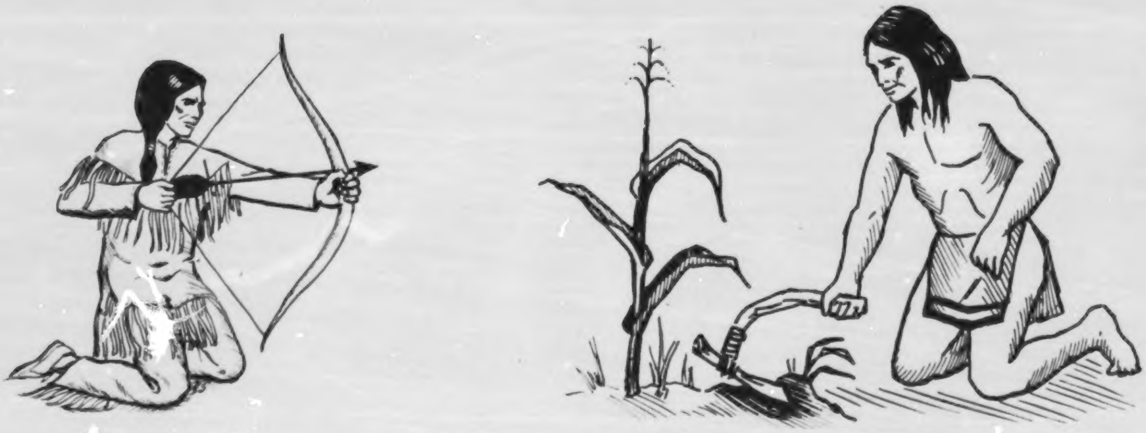
The Route from Spain to the New World

2. INDIANS ARE FOUND IN THE NEW WORLD

The New World was discovered by Columbus in the fifteenth century. It was already inhabited. Columbus named the people Indians. He thought he had found India.



Priests



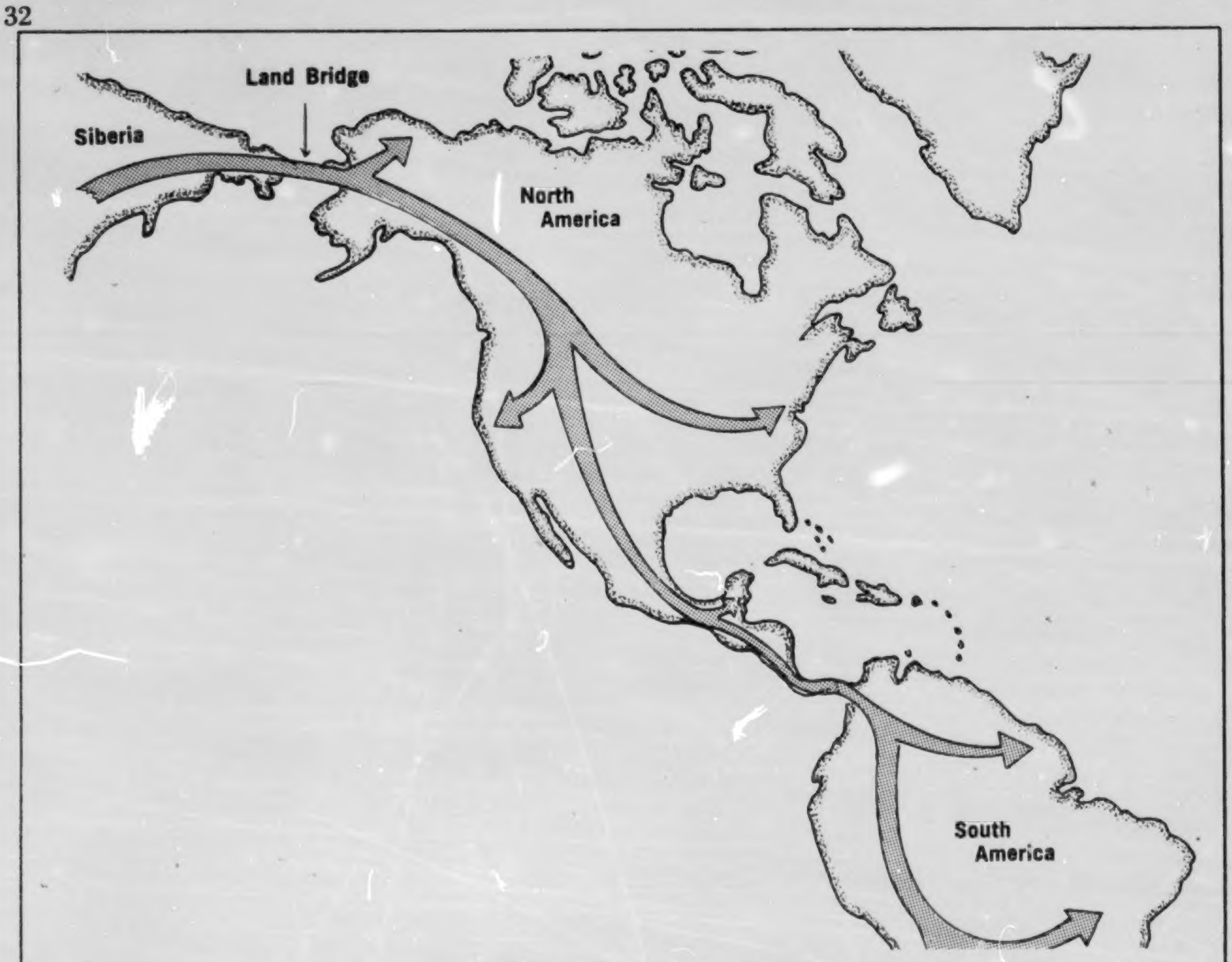
Hunter

Farmer

Indians Lived in Various Ways

3. INDIANS LIVED IN VARIOUS WAYS

There were many kinds of Indians. Some were hunters. Some were farmers. Some lived in simple huts. Others lived in great cities. Craftsmen made beautiful things. There were temples with priests. There was government. Where did the Indians come from? How did they develop in so many ways?



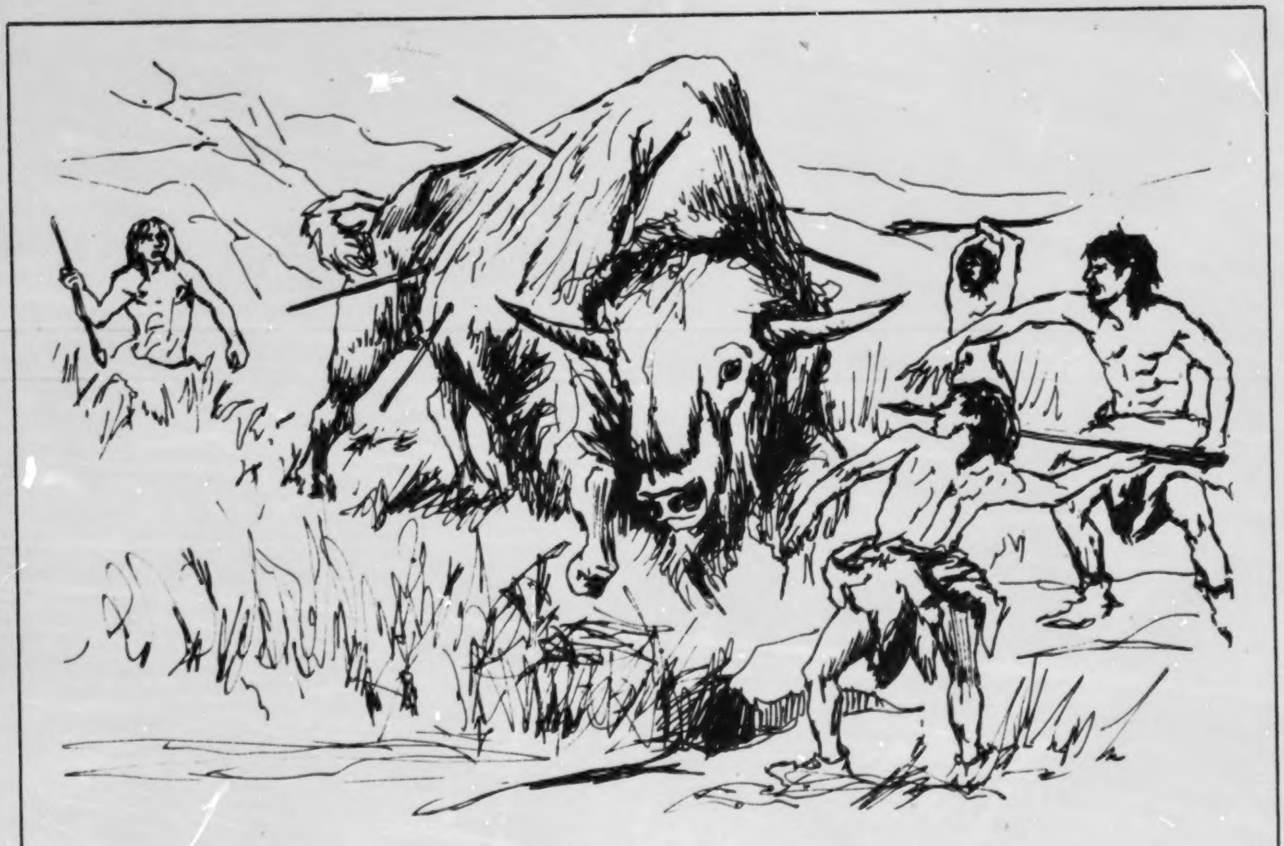
The Routes into the New World

4. MAN COMES TO THE NEW WORLD

Man came to the New World from Siberia. He came in the Late Pleistocene. It could have been 20,000 years ago. This was the time of the Ice Age.

This was a time when the climate was very cold. The land was covered with glaciers. Glaciers are big sheets of ice. Some are over a mile thick. The oceans had less water in them than now. There was land between Alaska and Siberia. It was called a land bridge.

Man came to the New World from Siberia over this land bridge.



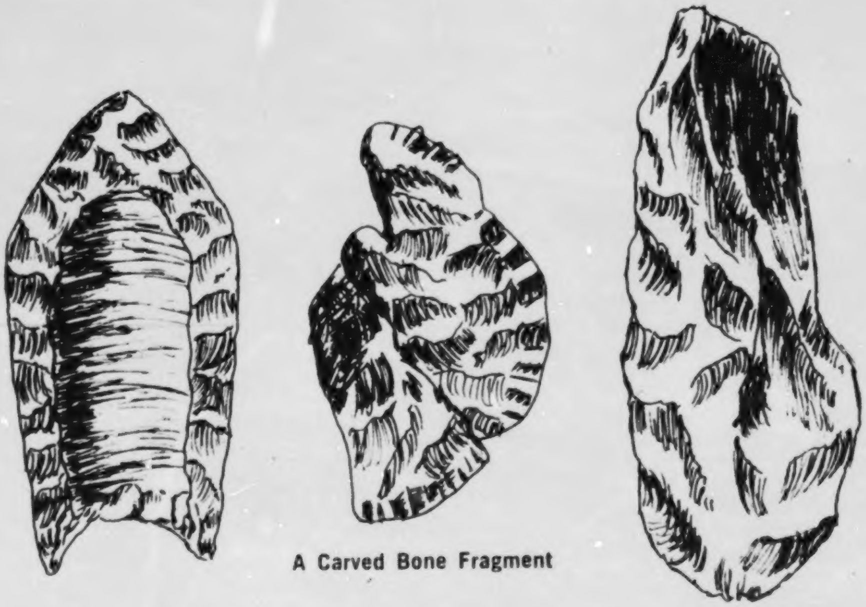
Paleo-Indians Hunting an Ice Age Bison

5. THE PALEO-INDIAN HUNTED BIG ANIMALS

Paleo-Indian means Old Indian. This name is given to the first Indians. The Paleo-Indians hunted big Ice Age animals. They hunted the mammoth, camel, horse, and bison. The camel, horse, and bison of the Ice Age were not like modern types.

Many extinct animals once lived in the High Plains of the United States. The climate between 15,000 and 8,000 years ago was wet. There was much grass for the big animals to eat.

Then the climate turned very dry. The grass dried up. The big animals disappeared. Between 5,000 and 2,000 years ago the climate became like it is now.



A Folsom Point

A Carved Bone Fragment

A Scraper

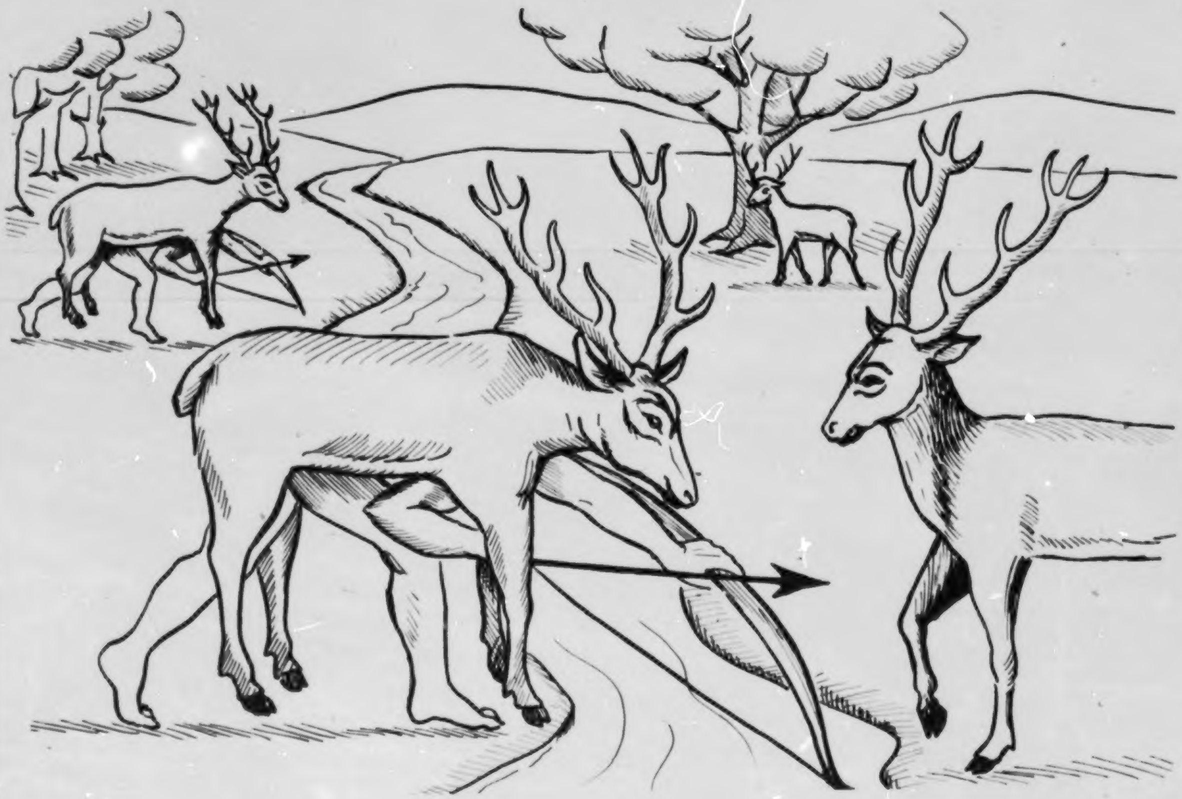
Tools of the Paleo-Indian

6. SPEAR POINTS OF THE PALEO-INDIAN: FOLSOM POINTS

Few skeletons of Paleo-Indians have been found. Spear points have been found with fossil animal bones. These show that man hunted these big animals.

The Paleo-Indian used a finely shaped spear point. It is called a Folsom Point. It was first found at Folsom, New Mexico. Other tools made of stone have been found with the Folsom points. Scrapers, knives, choppers, drills, and smoothers have been found. Sandstone smoothers were used to smooth things made of stone, wood, and bone.

Little is known about the Paleo-Indian. He hunted animals and used tools. He lived like cave men. He lived somewhat like cave men in the Old World.



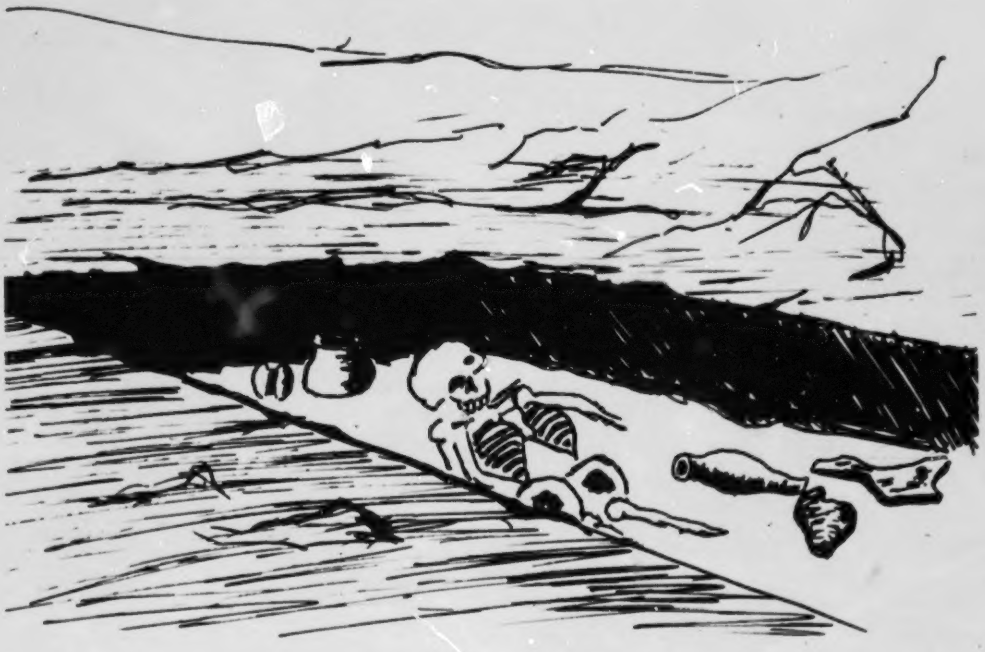
The Hunters Hide Under Deer Skins

7. HUNTING AND GATHERING IN THE ARCHAIC STAGE

The Archaic Stage is one in which the Indians were hunters and gatherers.

As the climate became drier and the grass died, so did the big animals. The Indians had to hunt smaller game. They also moved into new areas. They had to change their life ways. They had to change their culture.

The way they lived depended on their environment. Environment is what the place and climate are like where people live. The Indians now used many things for food. They used grinding stones to prepare plant food. They left the bones of fish and of many small animals where they lived.



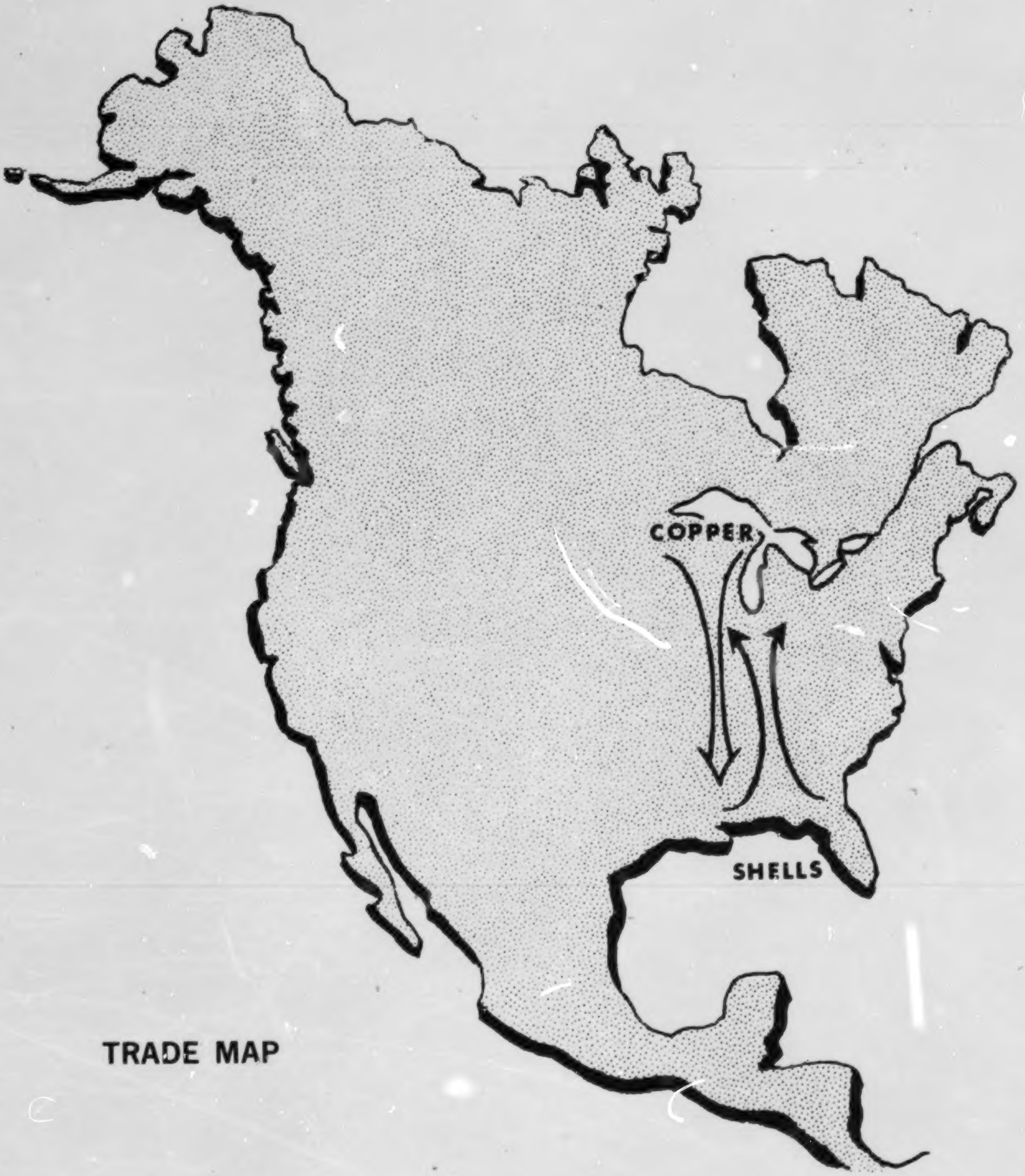
An Archaic Burial

8. TOOLS, TRADE, AND BURIALS IN THE ARCHAIC STAGE

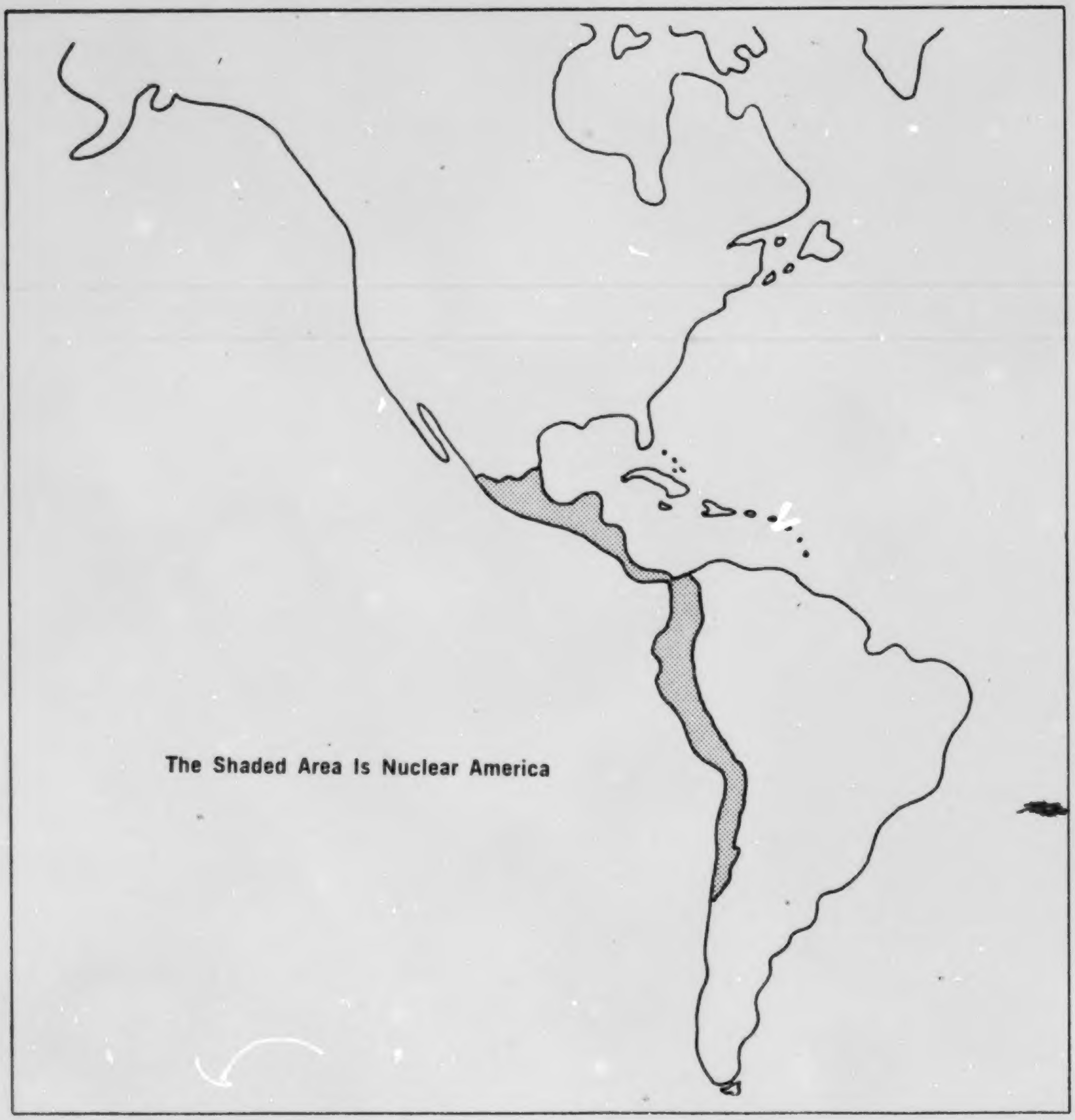
The Indians had more tools. They now had many artifacts of polished stone. Some of these were axes. With these they could work wood. Other polished stone artifacts were smoking pipes and pots.

Things were traded with people who lived far away. Sea shells from the Gulf of Mexico were traded with places inland. Copper from Lake Superior was traded with the Southeast.

Now the Indians began to bury the dead. Many burials from this stage have been found. Artifacts were placed with the bodies. Burials show the Indians had religious practices.


COPPER
SHELLS

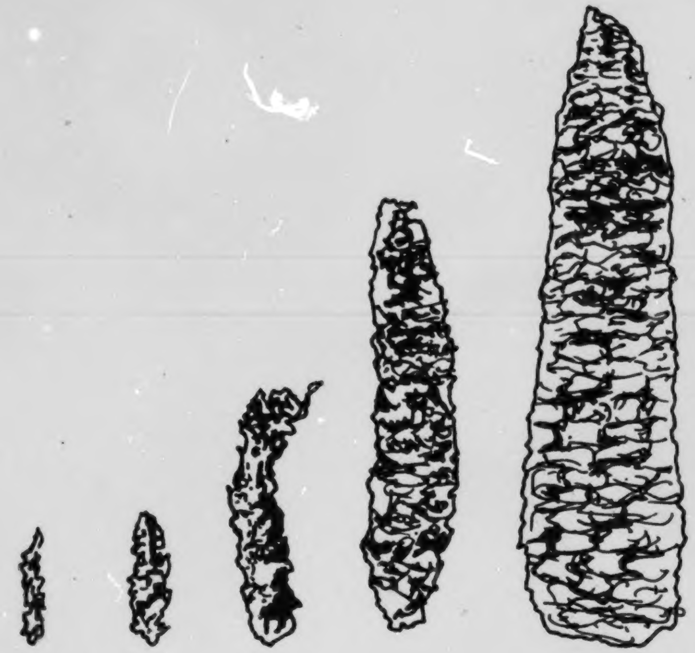
TRADE MAP



9. NUCLEAR AMERICA

Before 3,400 B.C. all Indians in America were in the Archaic Stage. Later in what is now Mexico, Central America, and Peru, agriculture developed. This stage is called the Formative Stage. The place that agriculture began is called Nuclear America. From Nuclear America agriculture later spread to other parts of the New World.

Agriculture made settled villages possible. Later cities grew. Only Nuclear America has the higher cultural stages called Classic and Post-Classic.

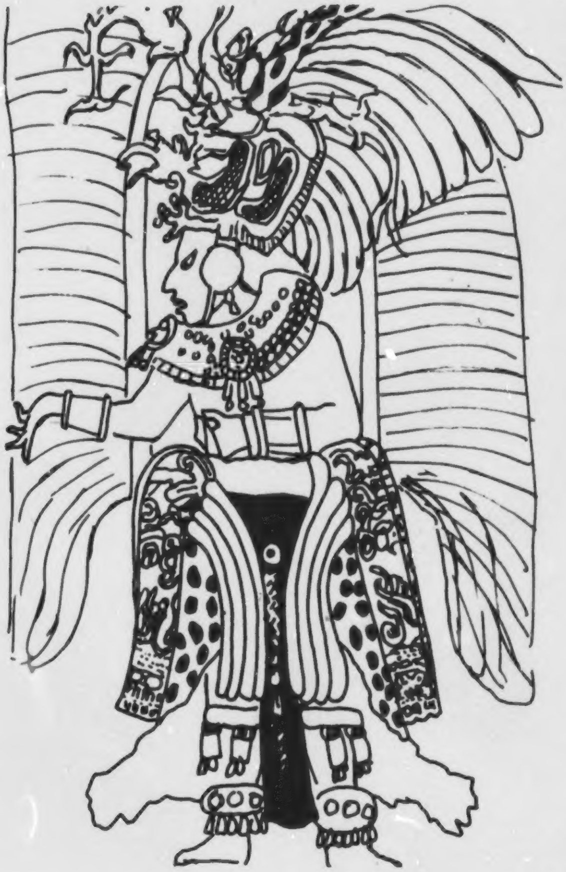


Maize Cobs Showing Increasing Size as a Result of Domestication

10. AGRICULTURE BEGINS IN THE FORMATIVE STAGE

The Formative Stage is the one in which agriculture began. The main plant was maize. Maize was first cultivated between 3,400 and 2,400 B.C. The first ears were small. Maize then supplied little food. Under domestication the ears of corn grew in size. By 1,500 B.C. maize was the main food.

Settled agricultural villages now dotted Nuclear America. Other domesticated plants were manioc, squash, beans, and cotton. Indians of the Formative Stage also spun and wove cotton.



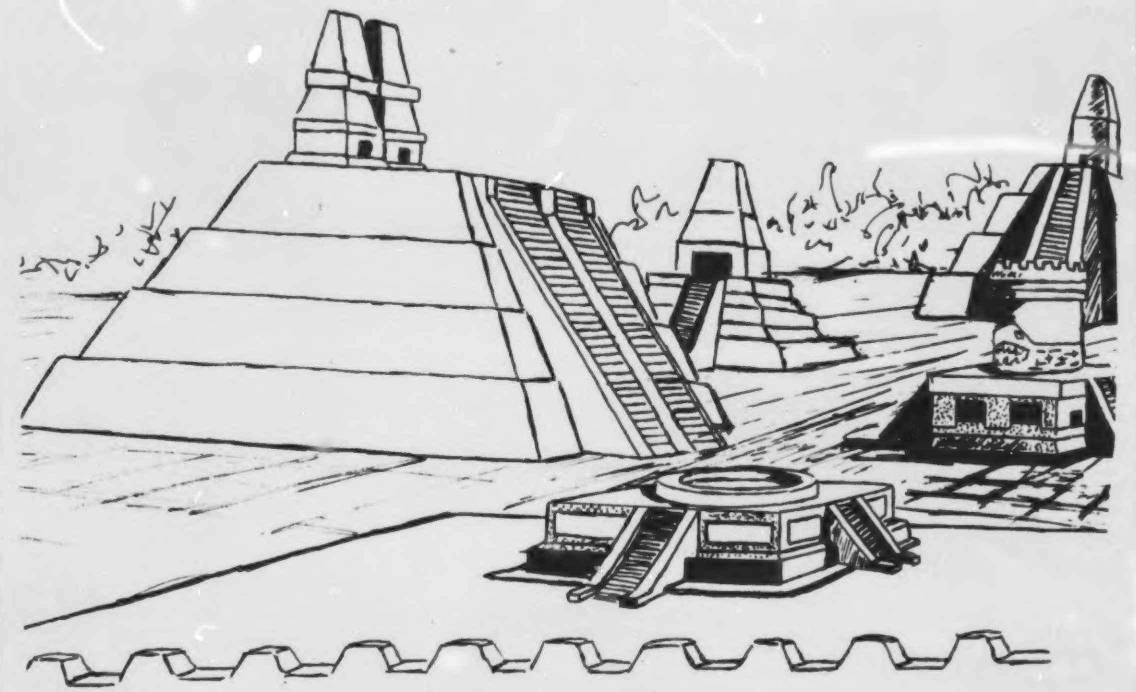
A Mayan Priest

11. CIVILIZATION BEGINS IN THE CLASSIC STAGE: THE MAYAS

In the Classic Stage there was more food, priest-leaders, and ceremonial centers. The Mayas are an example of this stage.

Village farmers learned how to grow more food. Everybody did not have to farm to eat. There was a surplus to feed other kinds of workers. A surplus means that the farmers grew more than they needed. People had time to do other things. Some people became priests. The priests performed ceremonies to make the maize grow. The priests also became leaders.

The maize ceremonies led to building ceremonial centers. The Mayas built beautiful ceremonial centers. They were built by villagers who were not needed to grow food.



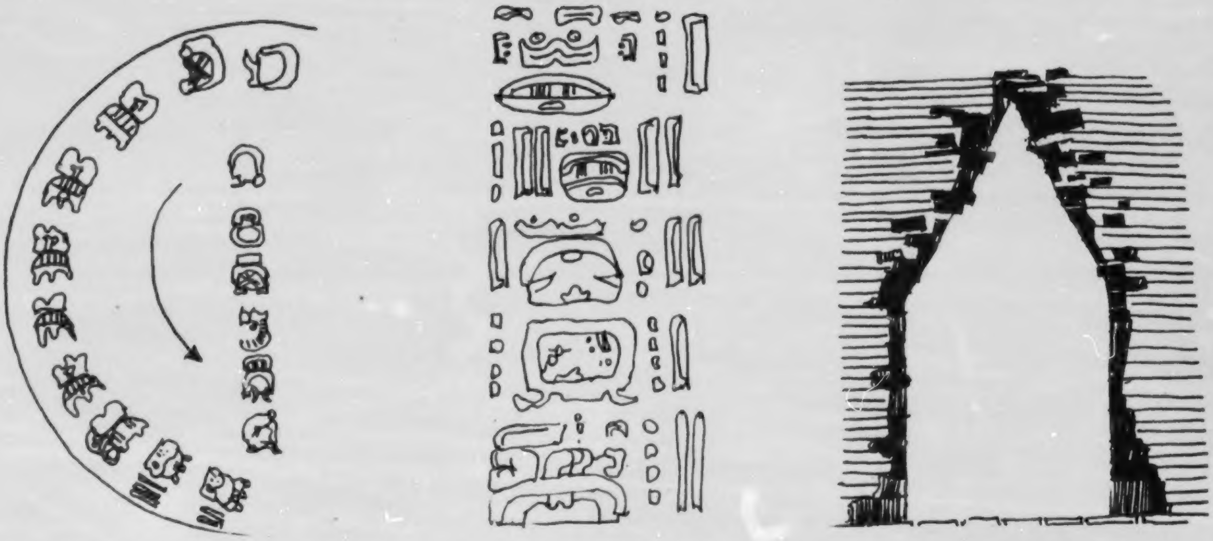
A Ceremonial Center

12. A CEREMONIAL CENTER

The ceremonial center was not a real city. Only the priests and their helpers lived in the centers. Farmers came to the centers to take part in the ceremonies. When the ceremonies were over, the farmers went back to their villages.

The ceremonial center was built around a square. The square is called a plaza. There were buildings around the plaza. In the center of the plaza was a pyramid. They did not build a pyramid with smooth sides. They built what is called a stepped pyramid. It was built by building a smaller square on top of a larger square. Staircases led to the top. At the top the priests performed rites.

The building of these centers required the work of many skilled workers and artists. The remains of many centers can be visited in Nuclear America today.


The Calendrical System

Mayan Hieroglyphs

A Corbeled Arch

Inventions of the Classic Stage

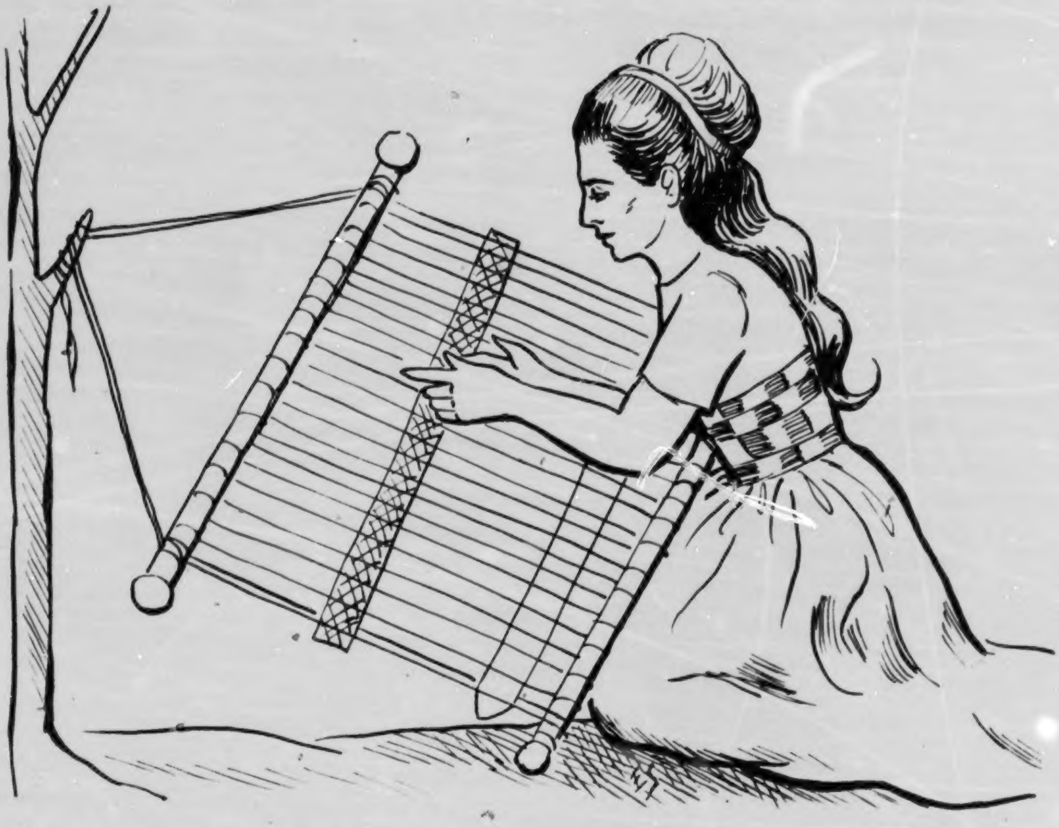
13. INVENTIONS OF THE CLASSIC STAGE

The priest-leaders of the Maya invented a type of mathematics. They were astronomers. An astronomer studies position of stars. This knowledge helped them keep up with the years and the seasons. They made two calendars. One was for every day use. The other was for religious use.

The Maya also found out how to use the number zero. The idea of zero is an important idea. We got our idea of zero from the Arabs. The Greeks and Romans did not use the zero. Imagine trying to do mathematics without the zero.

The Maya also had a picture writing. Archeologists cannot read Mayan writing.

The Maya also used a type of arch. The arch helped them to build larger buildings with higher ceilings.



Weaving Cotton Cloth

14. LIFE IN THE CLASSIC STAGE

Most people were farmers. There were no cities.

The people lived mainly as they did in the earlier Formative Stage. They planted corn, squash, and beans. They wove fine cotton cloth. They smoked tobacco.

They made artifacts of wood, clay, and stone. They also used rubber and metal. Metal was used in South America but not in Mexico.

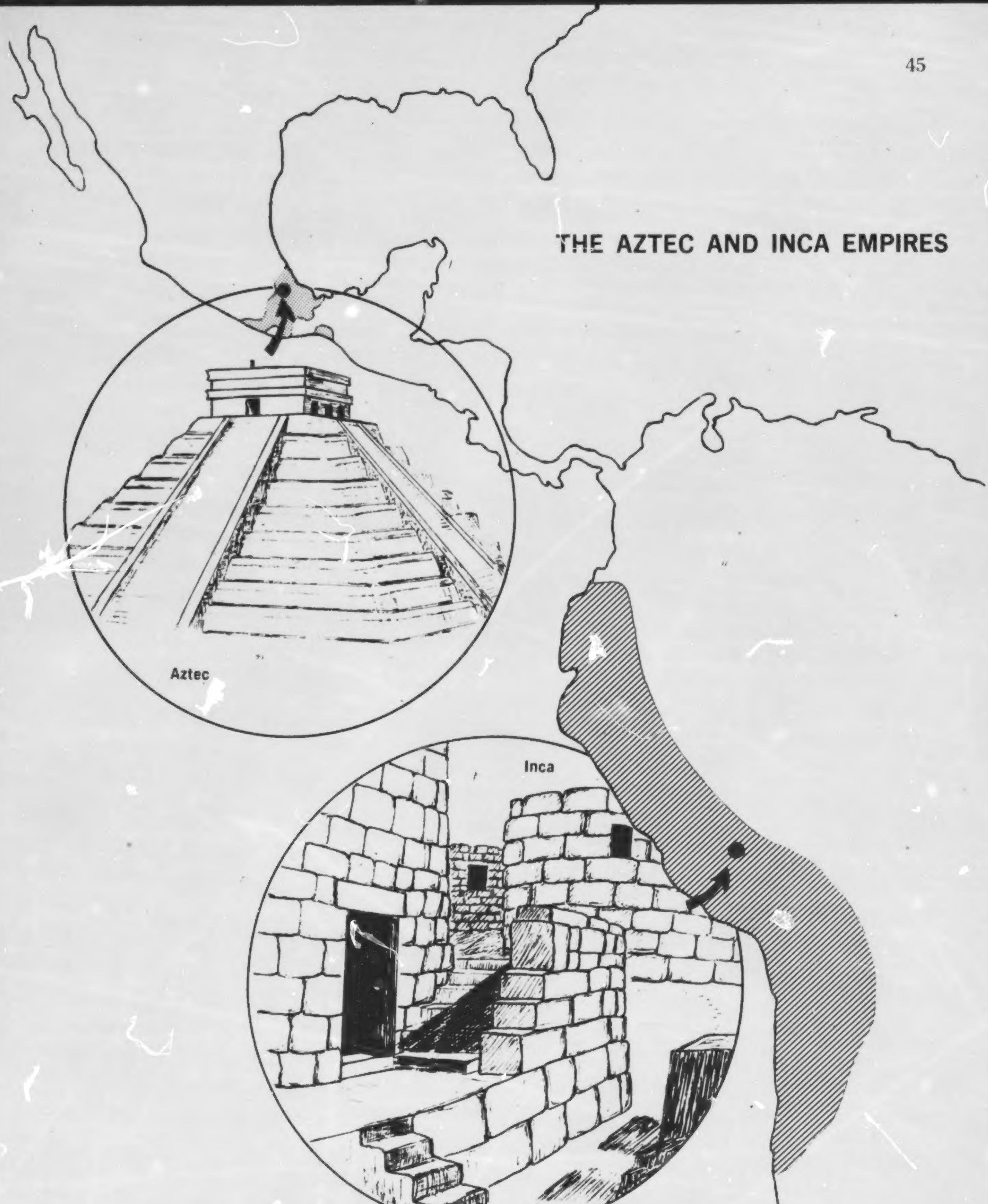
15. THE POST-CLASSIC STAGE: INCAS AND AZTECS

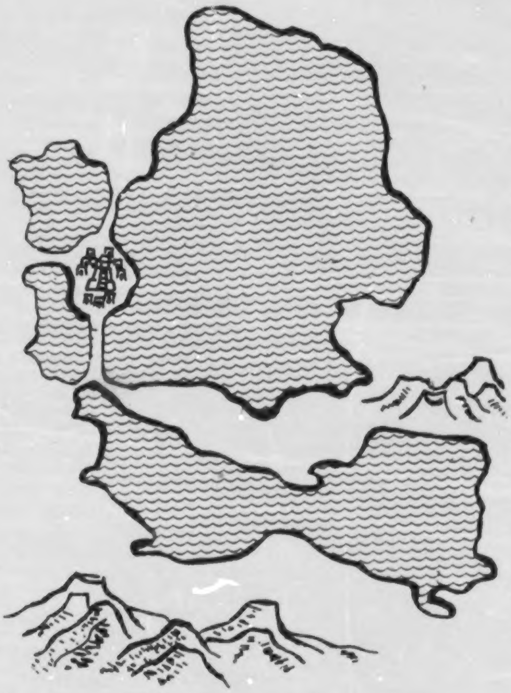
In the Post-Classic Stage there were two main developments. Military leaders took over and real cities developed. Empires were formed. The two best known empires were the Aztec in Mexico and the Inca in Peru.

The Aztec empire was made up of several conquered city states. They were conquered by the main Aztec city--Tenochtitlan. The conquered paid tribute to the Aztec emperor. But the conquered cities had their own leaders. Each city had its own government.

The Aztecs are discussed as an example of the Post-Classic Stage.

THE AZTEC AND INCA EMPIRES





The Aztec Capital

in the Middle of a Lake

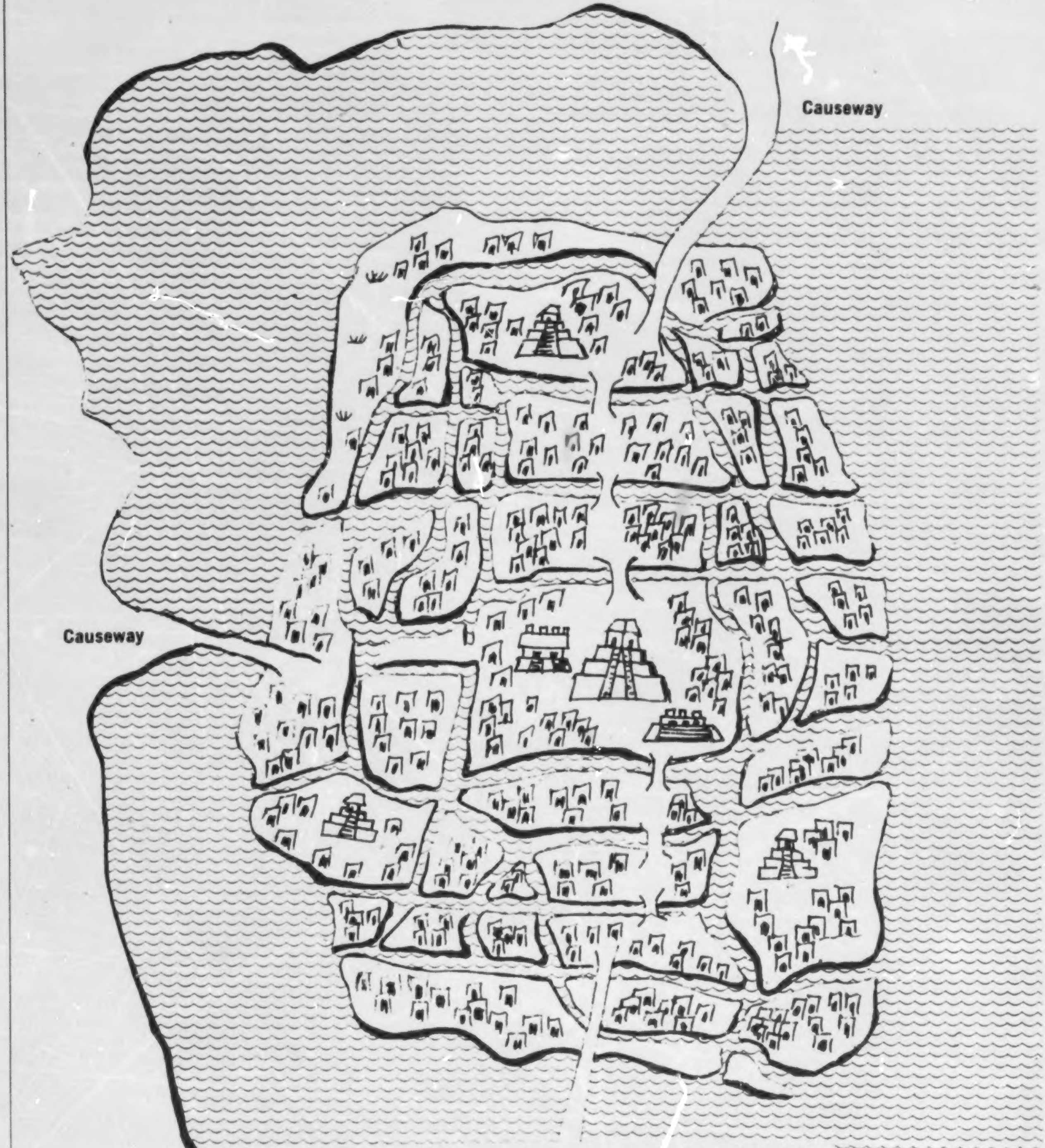
16. POST CLASSIC: THE AZTEC CAPITAL CITY OF TENOCHTITLAN

The Aztec came in from the north of Mexico in the twelfth century. This was only three hundred years before they were conquered by the Spanish.

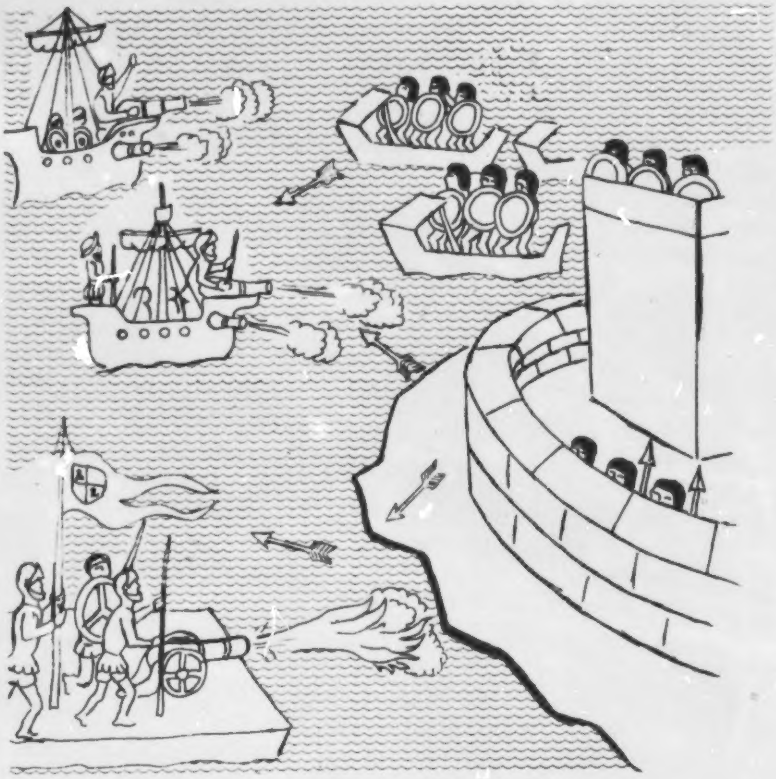
They built a capital city on the middle of a lake. The city was called Tenochtitlan. The lake protected the city against enemies. There was a network of canals. The canals provided good transportation. Boats could bring food from all sides of the lake to the city.

Tenochtitlan was not just a ceremonial center. It was a real city. It had merchants and craftsmen as well as rulers and priests. It had a large population. Over 300,000 people lived in Tenochtitlan when the Spanish came.

It was a beautiful city and a clean city. It had a sewerage system. Drinking water was brought by two aqueducts from the mountains. Few cities in Europe at that time were as well planned as Tenochtitlan.


Causeway
Causeway

OLD MAP OF TENOCHTITLAN SHOWING CANALS



The Spanish Conquest of the Aztec Capital

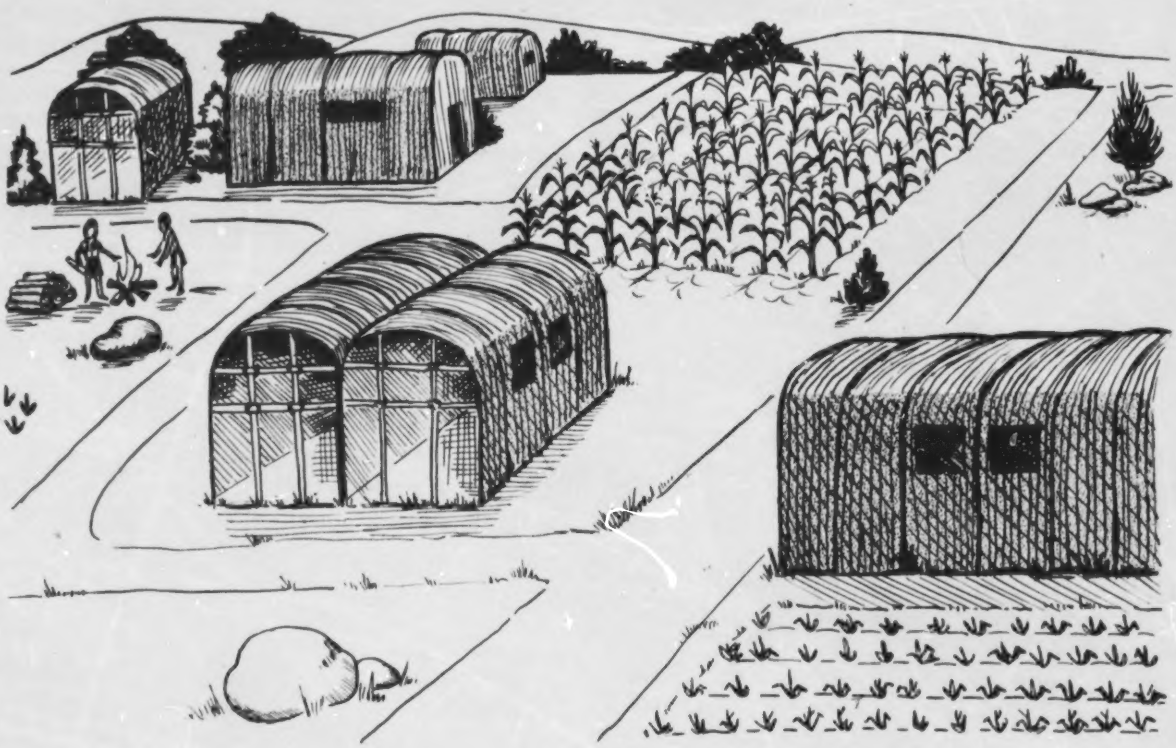
17. THE SPANISH CONQUEST ENDS INDIAN CIVILIZATION

The cities conquered by the Aztecs did not like to pay tribute. They were always ready to rebel.

The Spanish under Cortez invaded Mexico in 1519. They had heard stories of the gold of the Aztecs.

Cortez gathered many Indian allies. The subject tribes conquered by the Aztecs hated them more than they feared the Spanish. These Indian allies helped Cortez defeat the Aztecs.

The Spanish conquest upset Indian society. The Indians did not progress further but they copied ways of the Spanish. Much of the population of Mexico today is Indian.

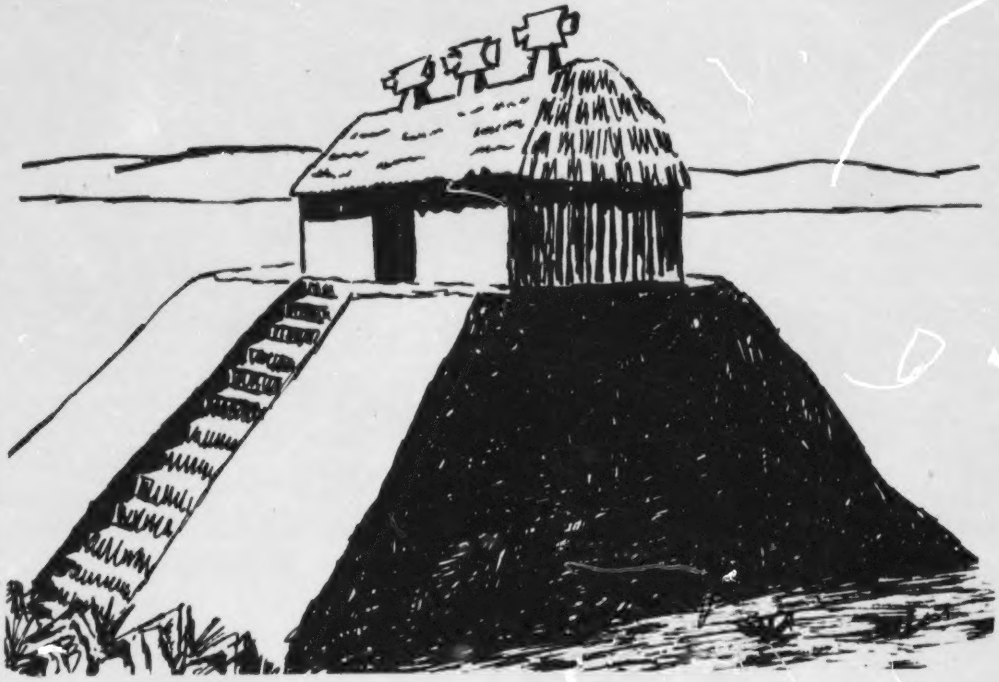


A Settled Village of the Formative Stage

18. THE FORMATIVE STAGE IN NORTH AMERICA: EASTERN WOODLANDS

The Formative Stage in Nuclear America was village life, based on growing maize. The growing of maize spread to two areas in North America. These two areas were the Eastern Woodlands and the Southwest.

The Archaic Stage of hunting and gathering slowly gave way to village life with maize growing. The Indians lived in settled villages. They grew squash, beans, and pumpkins. They smoked tobacco. The main crop was maize.



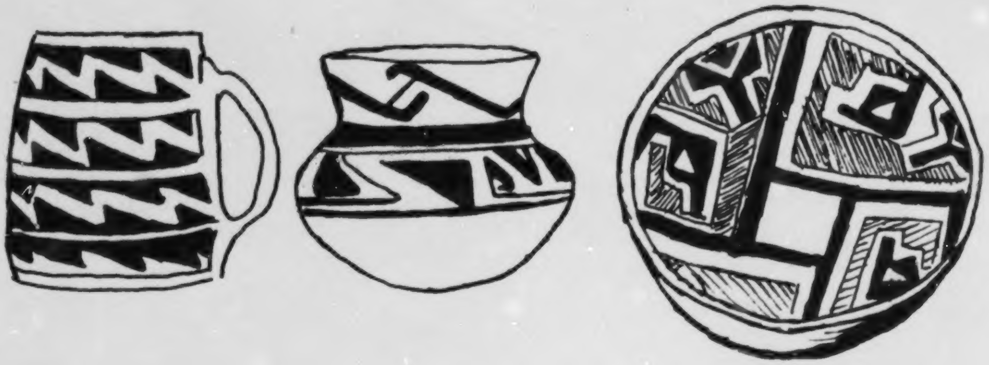
Ceremonial Mound at Etowah

19. EASTERN WOODLAND LIFE

The Eastern Indians made pottery and wove cloth. They traded with distant tribes. Some made pipes of stone carved with animal figures. These are called "platform" pipes.

In some places villages increased in size until they became towns. Many were fortified with plazas and flat-topped mounds. These plazas and mounds look like early plazas and mounds in Nuclear America.

Important ceremonial sites were Etowah and Macon, Georgia, and Moundville, Alabama.



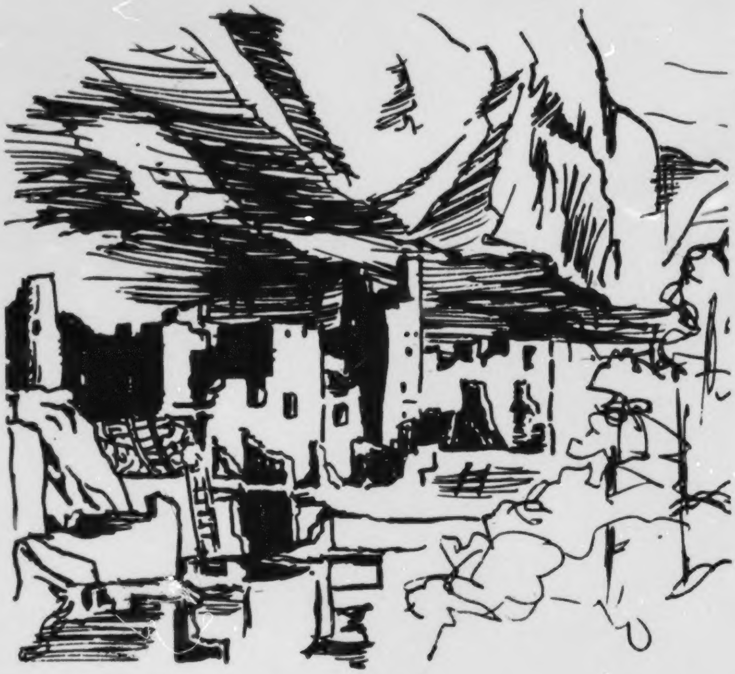
Anasazi Pottery

20. THE FORMATIVE STAGE: ANASAZI FARMERS OF THE SOUTHWEST

The largest and best known group is called Anasazi. They are ancestors of the modern Hopi and Zuni.

The Anasazi were farmers. They lived on the plateaus or flat mountains. At first they did not have pottery. They made baskets for containers. At this time they are sometimes called Basketmakers. They grew maize, tobacco, and pumpkins. They used a digging stick to loosen the soil. They hunted deer and smaller animals. They used a spear and throwing stick.

Between A.D. 500 to 700 their life improved. They began to use pottery. They began to grow beans and keep turkeys. Bows and arrows were used in place of spears. They settled in villages. The houses were pit houses. The floor was below ground level.



Cliff House at Mesa Verde

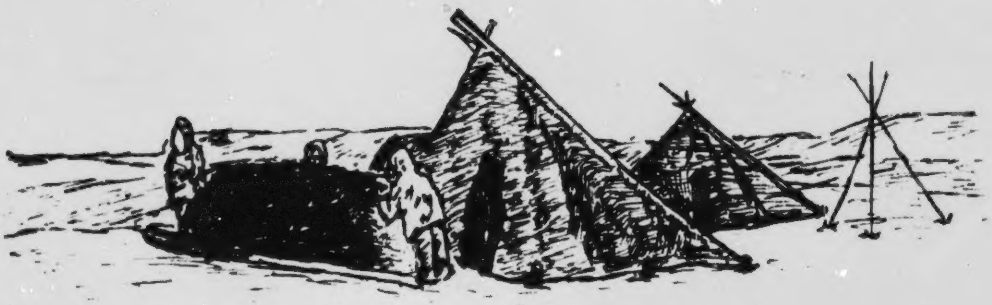
21. FORMATIVE STAGE: THE GREAT PUEBLOS OF THE ANASAZI

The great period of the Anasazi was between A.D. 1,000 and 1,300. They built large compact villages of adobe brick or rock. A compact village is one in which the houses are joined together. These are called pueblos, a Spanish word meaning town.

Some were very large and could house thousands of peoples. Among the most famous ruins are the cliff houses at Mesa Verde and the one in the lowlands called Pueblo Bonito.

Farms were located outside the villages. Each morning the farmers would go out to their fields. In the evening they would return to the protection of the village.

By 1300 many pueblos had been abandoned. The Hopi of today live much like the Anasazi. The Hopi live in the twentieth century. Their culture is still at a level of the Formative Stage.



Eskimo Summer Tents

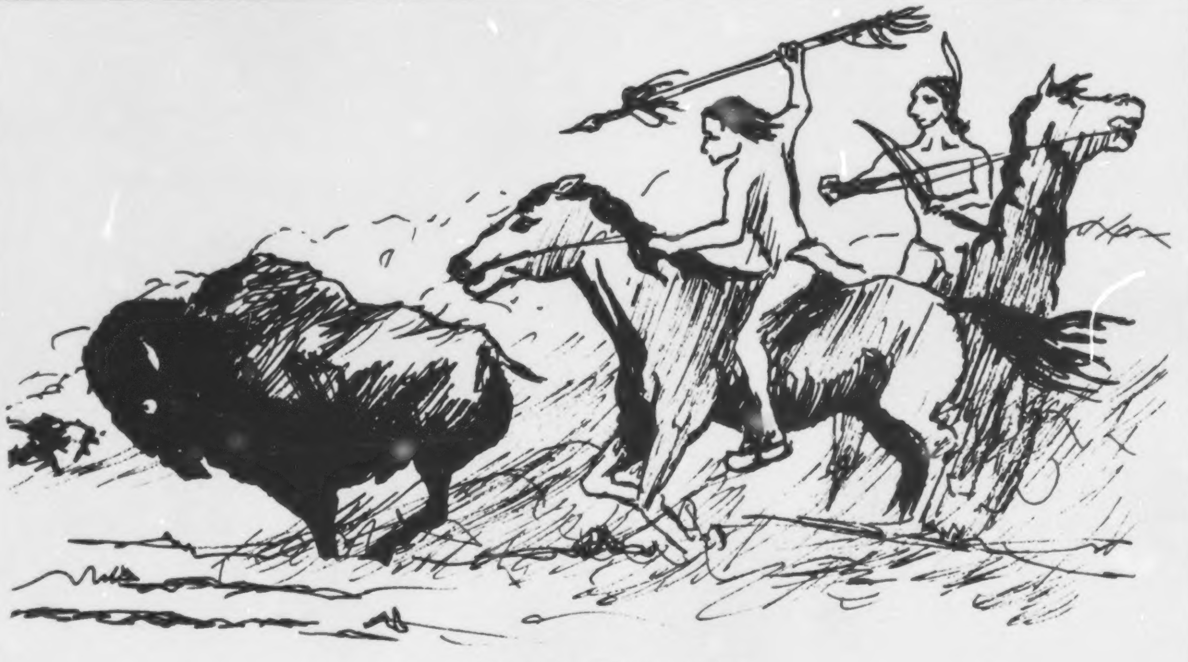
22. THE ESKIMO

The Eskimo live in the Arctic. They are hunters and gatherers. They live close to the water and live mainly from sea animals.

The Eskimo came into North America in fairly recent times. The oldest sites are in Alaska. They are only 4,000 years old. It is thought that the Eskimo went eastward, moving along the Arctic coast.

The Eskimo look like people who live in Siberia. They do not look like the American Indian.

The Eskimo was one of the last groups to enter the New World. They fit into only one stage--the Archaic Stage of hunting and gathering.



The Historic Plains Indian

23. THE HISTORIC PLAINS INDIAN

The Plains Indian is an historic Indian. He appeared after there were horses. Horses made it possible to cover great distances.

Before horses, few Indians lived on the plains. The Spanish brought over horses in the sixteenth century. The Indians got horses from the Spanish. Horses were used to hunt buffalo and to raid other Indian tribes.

The Plains horse culture was highest in the early nineteenth century. It collapsed quickly after 1870. The white man killed off his food supply--the buffalo. The white man defeated the Indian and took his land. He put him on small areas of land called reservations.

All over the world people think of the American Indian as a Plains Indian. Their way of life lasted for about a hundred years. It is not typical of American Indian life.

24. SUMMARY OF THE PRE-HISTORY OF THE NEW WORLD

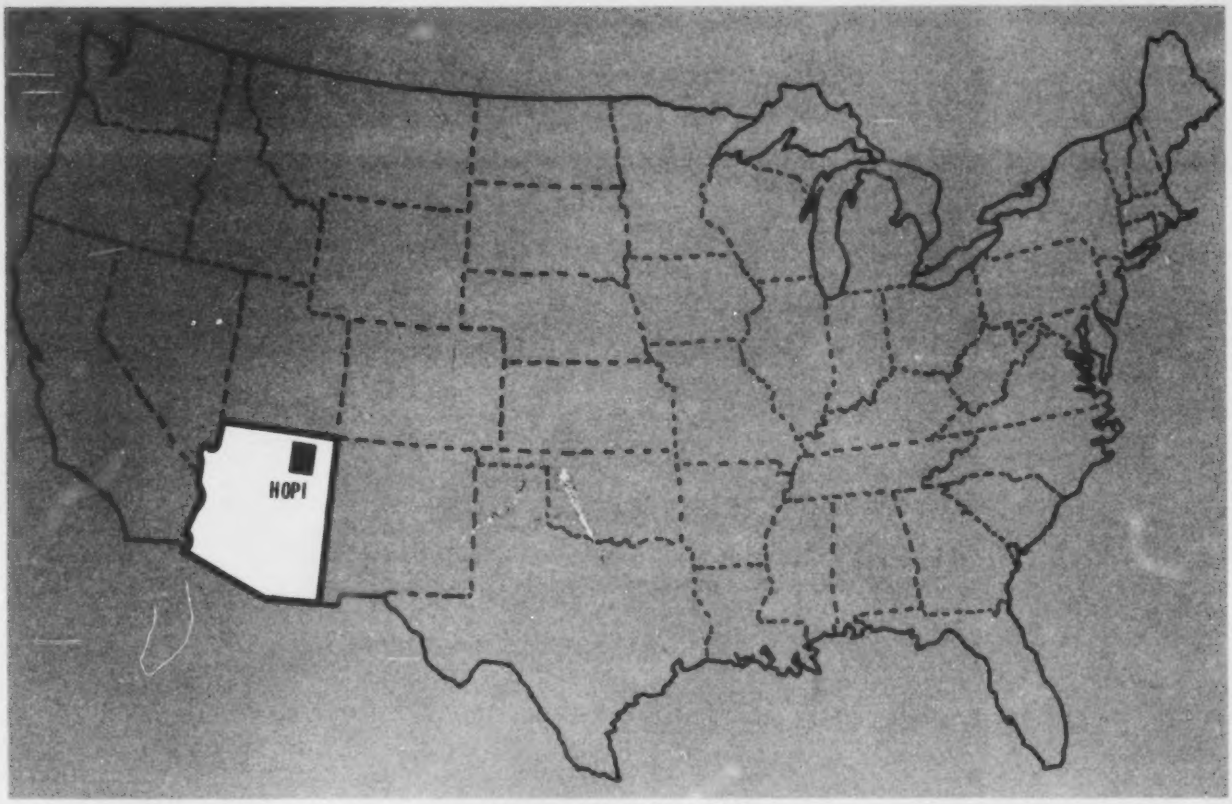
The pre-history of the New World has been discussed in five cultural stages.
These stages are:

Paleo-Indian - big game hunting
Archaic - general hunting and gathering
Formative - beginnings of agriculture and villages
Classic - ceremonial centers and villages
Post Classic - military governments and large cities

All these stages appeared only in Nuclear America. The cultural advance of Indians in the New World was upset by invasions of new migrants. These migrants were Europeans from the Old World.

At the time of European Conquest, most Indians were farmers. They also hunted, but they got their main living from corn and gardens.

In the next chapter, a farming pueblo people will be discussed. These are the Hopi. These contemporary Indians of the American Southwest live much like Indians in the Formative Stage. However, their way of life is undergoing many changes from contact with American civilization.



Map of the United States

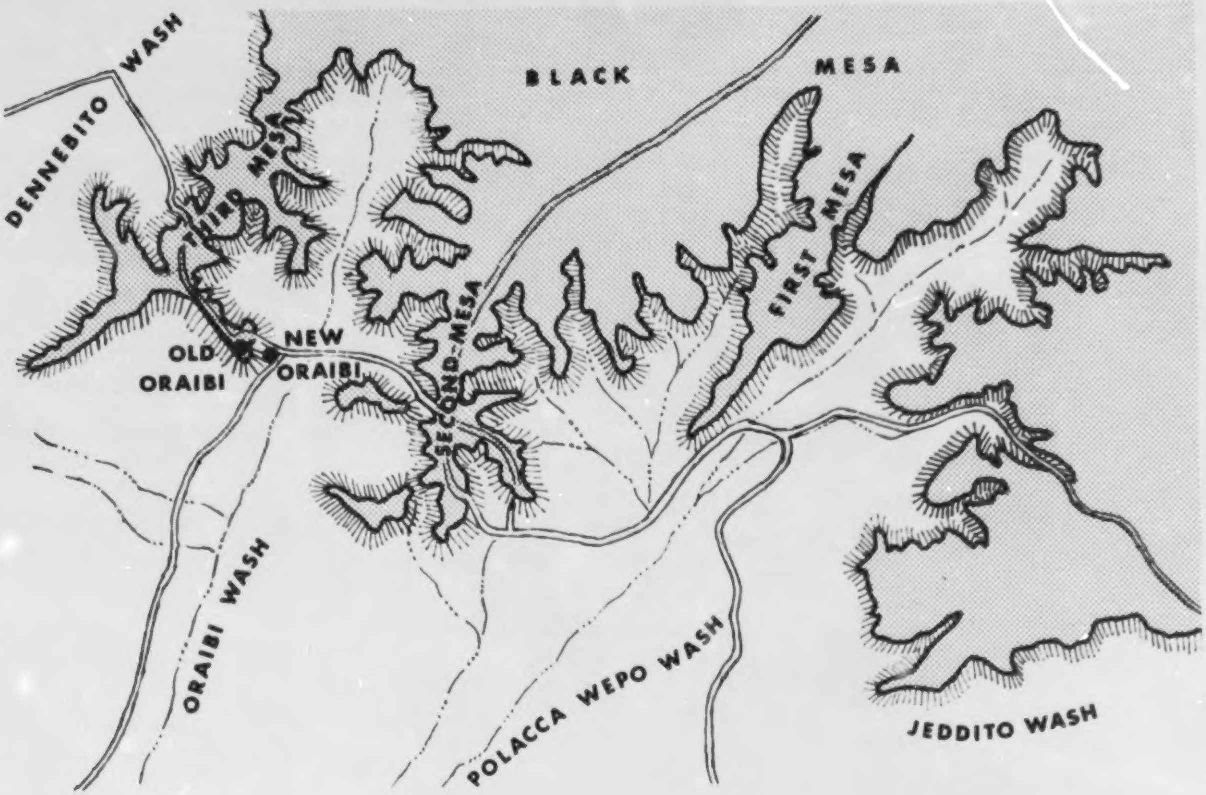
Chapter III

THE HOPI

1. WHERE THE HOPI LIVE

The Hopi are Pueblo Indians. Pueblo is a Spanish world meaning "village." The Hopi live in eleven villages. These villages are in Arizona. They are in a reservation area. A reservation is land set aside for the Indians to use. The Hopi reservation is in northeastern Arizona.

There are now about 2,000 Hopi.


DENNEBITO WASH
THIRD MESA
BLACK MESA
SECOND MESA
FIRST MESA
OLD ORAIBI
NEW ORAIBI
ORAIBI WASH
POLACCA WEPO WASH
JEDDITO WASH

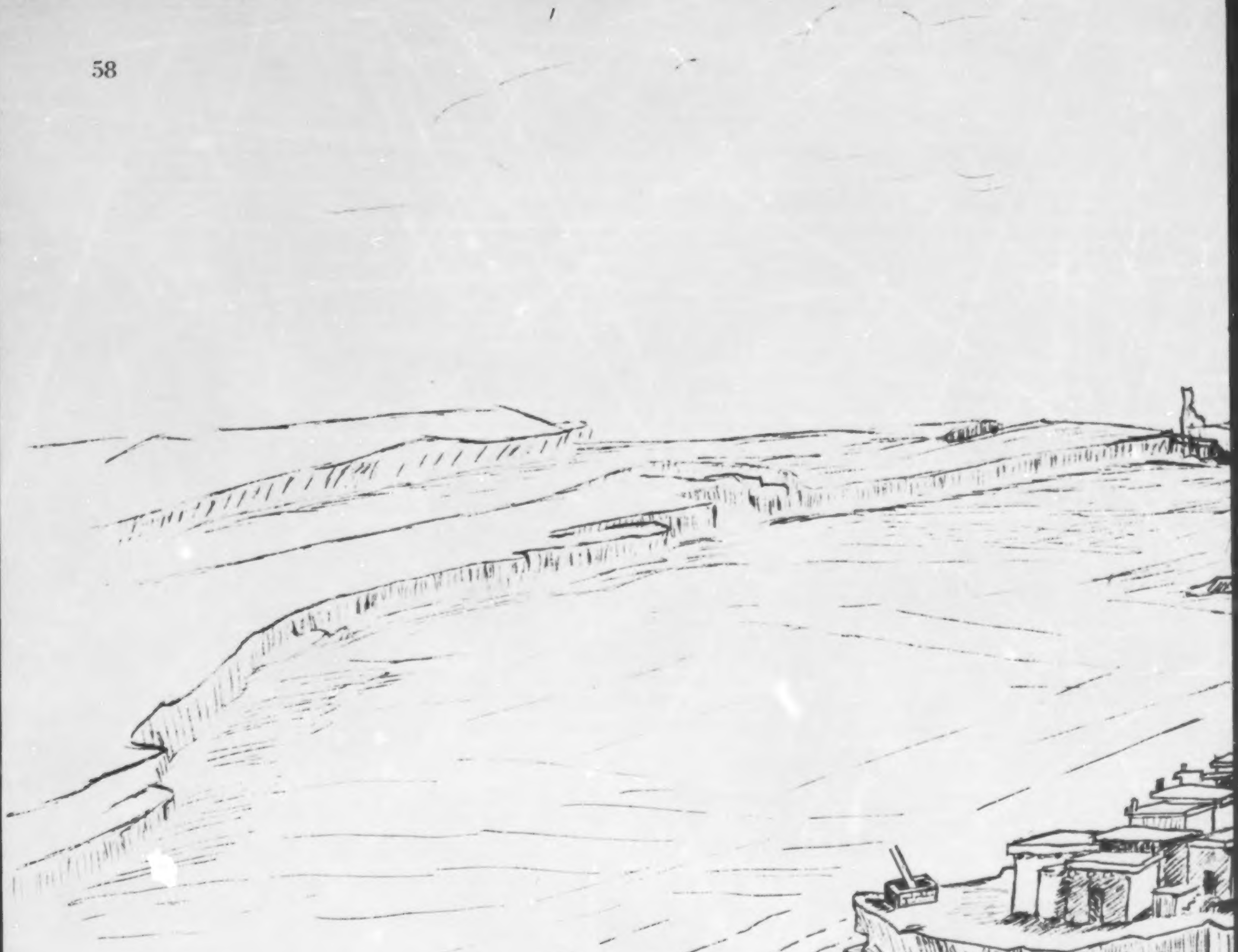
Map of Hopi Land

2. THE LAND OF THE HOPI: BLACK MESA

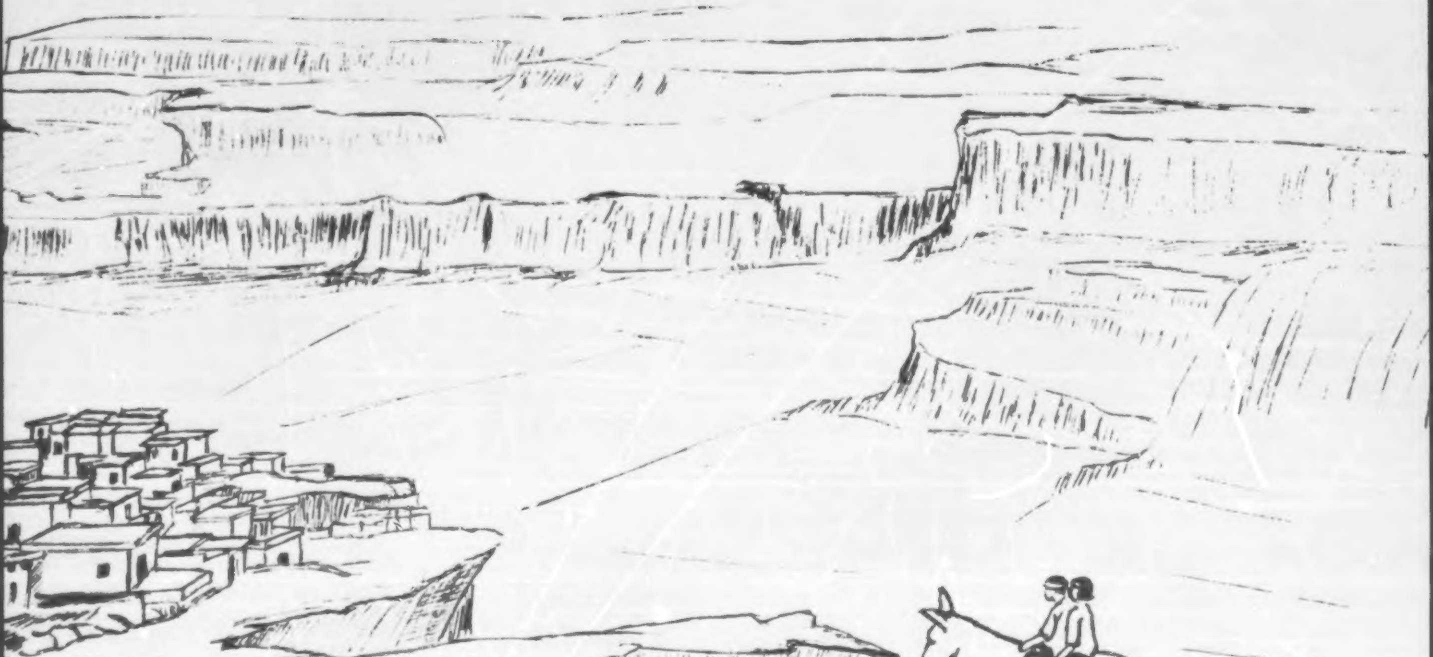
The Hopi villages are on Black Mesa. Mesa is a Spanish word which means "table." The top of Black Mesa is flat.

The villages are built at the southern end of the Mesa. They are built on fingers on Black Mesa called "spurs." These spurs are about 600 feet higher than the valley floor.

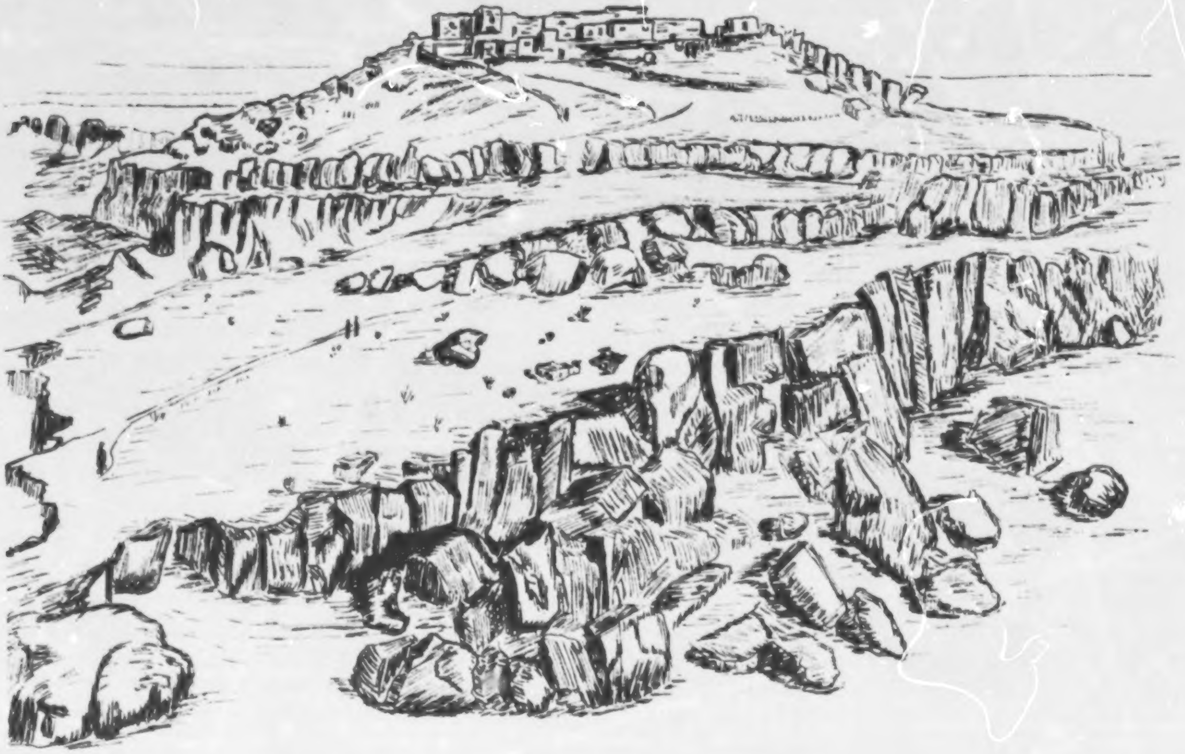
Black Mesa is a sandstone mountain. At the north it is 8,000 feet above sea level. Rainfall on the mountain is caught in the sandstone. It seeps out at the bottom of the spurs. Here the Hopi have their gardens.



HOPI VILLAGE ON A



SPUR OF BLACK MESA



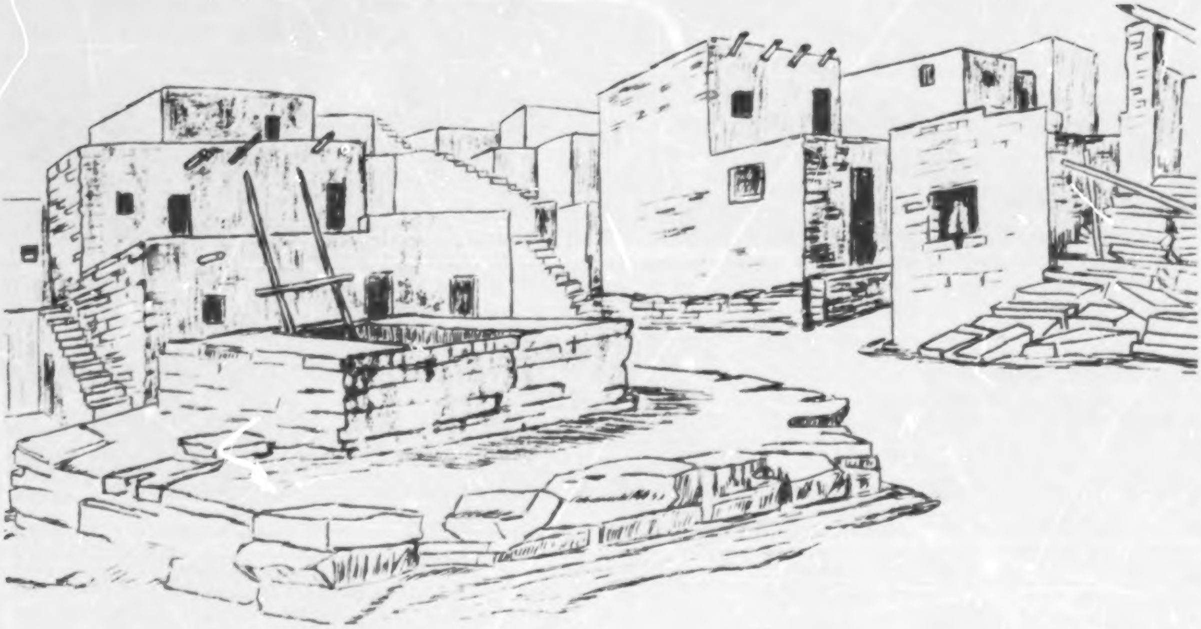
3. THE HARSH, DRY LAND OF THE HOPI

The Hopi land is rocky, dry, and sandy. It is cold in the winter and hot in the summer.

The villages are built on the spurs of the mesa. There are no trees. There is too little rain for cultivated plants to grow. The vegetation is made up of small woody plants and dry grasses. In the summer there are thunderstorms. In June and August there is much run-off water. This floods and damages the soil.

The soil at the bottom of the mesa is sandy. As in other dry areas, there is much alkali in the soil. There is little top soil. The high winds blow much soil away.

It takes much hard work to make a crop.

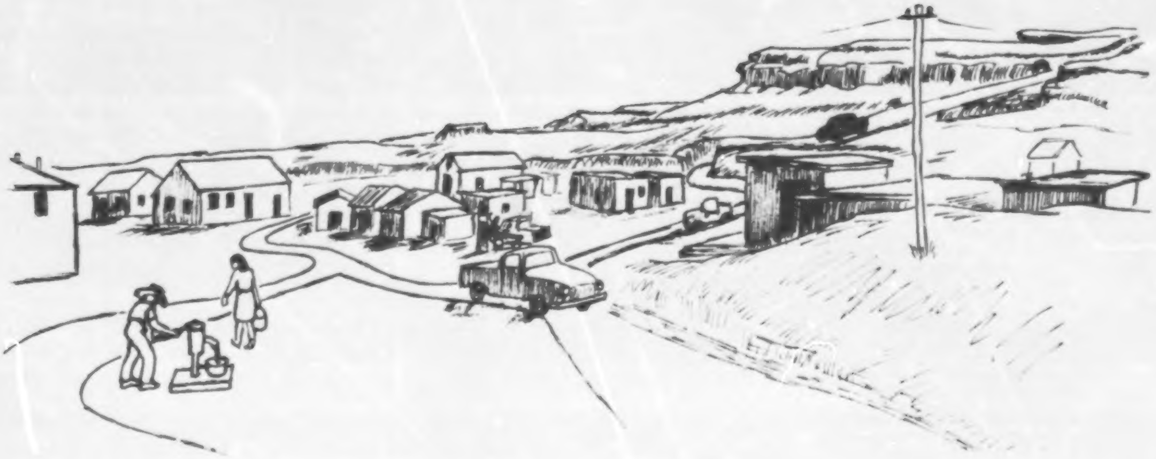


4. THE OLDEST INHABITED VILLAGE IN THE UNITED STATES: OLD ORAIBI

Old Oraibi is a Hopi village. It is located on top of the Third Mesa. It is probably the oldest inhabited village in the United States. Finds of pottery show that it has been inhabited since 1150 A.D. This was 350 years before Columbus discovered America.

Old Oraibi is built in pueblo style. The houses are built of stone and adobe. Adobe is dry mud. The roofs are supported with wooden beams. The roof is covered with adobe plaster.

The people who live in Old Oraibi are very old fashioned. They do not want to change their ways.

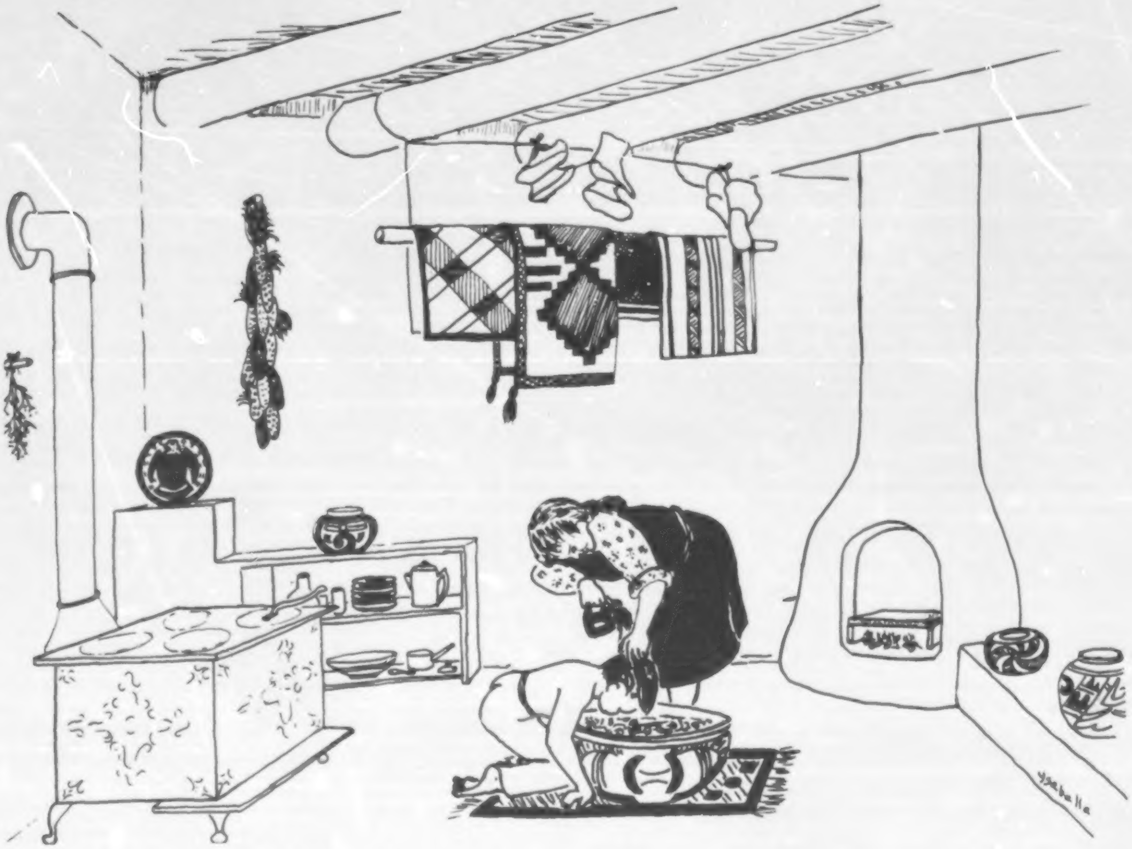


5. NEW ORAIBI: A NEW HOPI VILLAGE

New Oraibi is at the foot of the Third Mesa. Some houses are adobe houses. Some are built of wood. The roofs are gable roofs (⋀ shaped) covered with tin. The houses are scattered. It is not a compact village, as are the old pueblos.

New Oraibi is the largest of the new or "progressive" villages. Progressive means a wish to progress or advance.

New Oraibi was started about 1900. It was begun by Hopi who left Old Oraibi. Some of the Oraibians wanted more contact with white culture. Other Oraibians wanted to keep their old Hopi ways. The ones wanting to change moved down from the mesa top. They started another village. Now there are two Oraibi villages, an Old Oraibi and a New Oraibi.



6. A TRADITIONAL LIVING ROOM

A Hopi pueblo is a series of areas where special things are done. Some are used by people from different families. These areas are the courtyards and ceremonial rooms. Each family has its own living room and storeroom.

The living room is generally small. It may be eight by ten feet or as large as fourteen by sixteen feet. It is an all-purpose room. Food is cooked and eaten here.

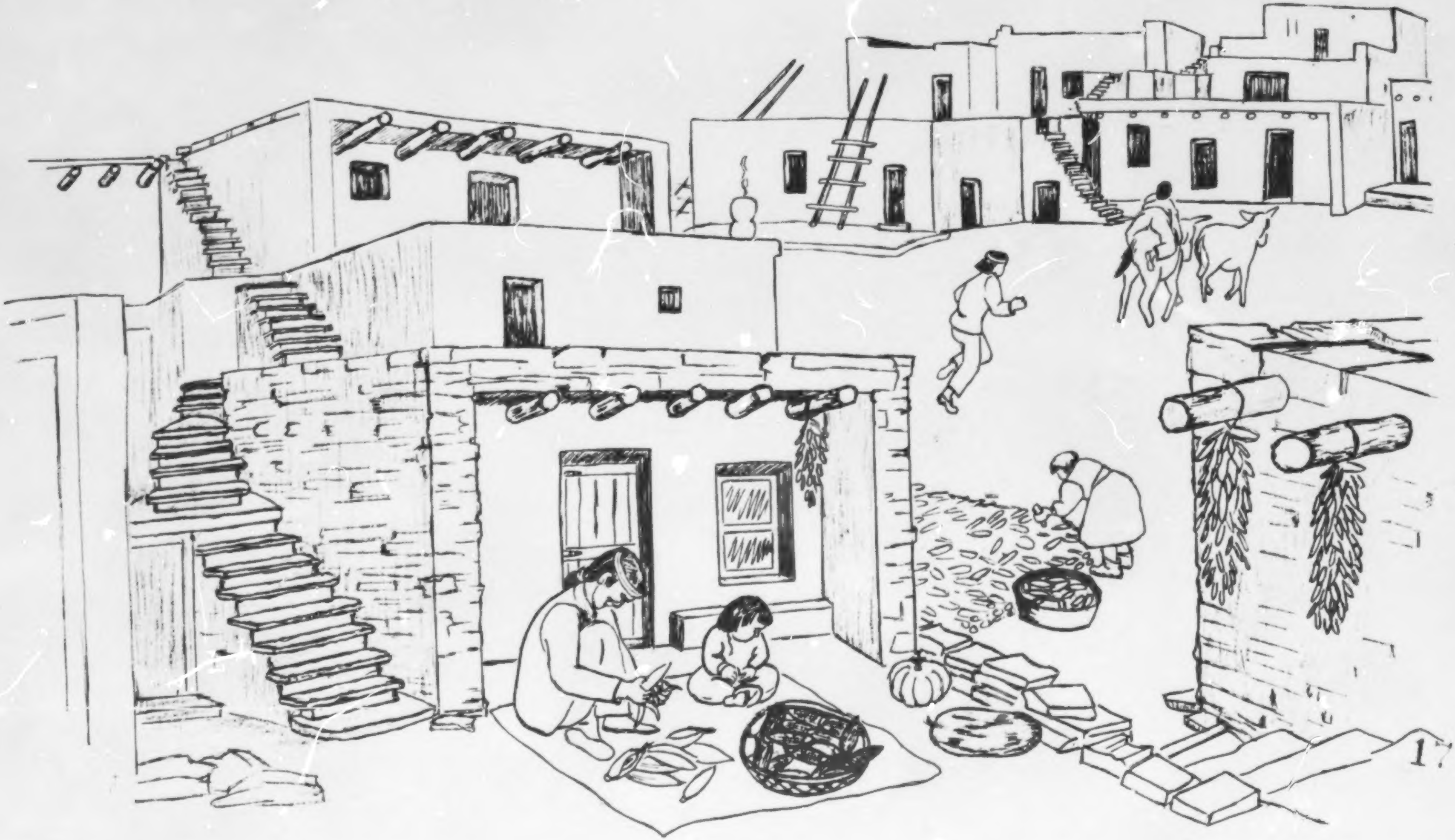
It has a fireplace and a stove. The stove is a new way of cooking.

7. A COURTYARD SCENE

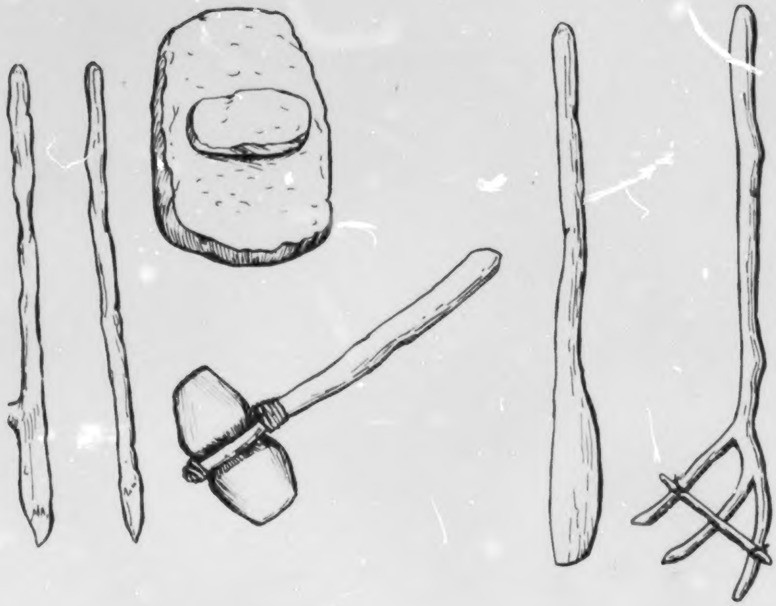
This is an inside view of a Hopi pueblo. Each room is built next to another room. This is like a row house in our cities. The rooms are also built on top of one another. The top rooms are set back. The roof of the lower room serves as a terrace.

Some of the upper rooms are reached by wooden ladders. Some are reached by a rough stone stairway.

This picture shows the rock and adobe construction of a pueblo. The inside of the beams stick out through the walls. The windows are small. Ventilation in these small rooms is poor.



A COURTYARD SCENE



8. TRADITIONAL HOPI TOOLS

The tool kit of the Hopi was very limited. He had few tools.

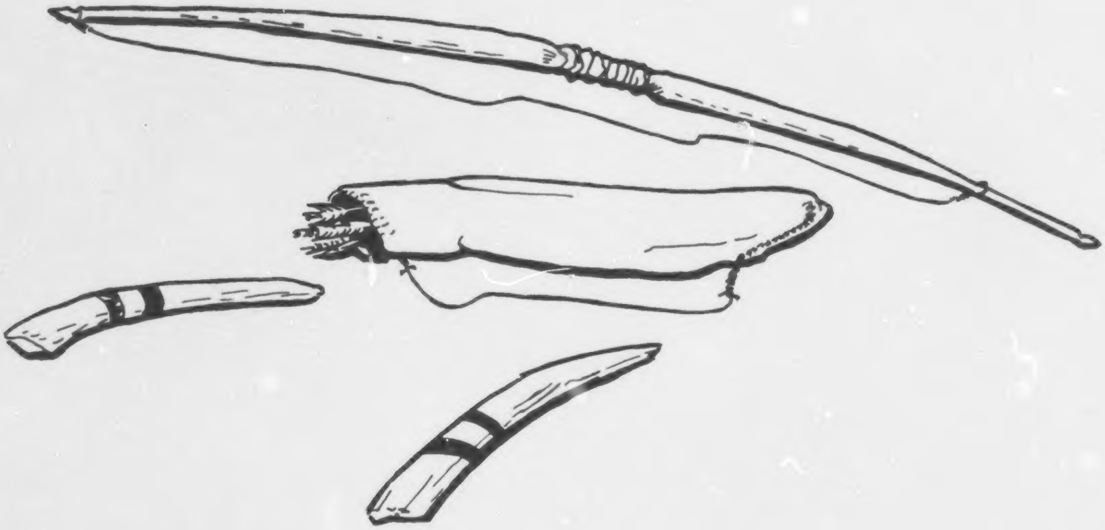
The dibble is a digging stick. It was used to dig holes in the ground to plant seed. It was then used to cultivate the plants. The dibble is a hard stick about three to four feet long. It is pointed on one end.

The metate is a grinding slab. It is the large bottom stone. On top is a small hand stone called the mano (Spanish, hand). The grains of maize are placed on the metate. The hand stone is used to grind the corn. The corn is ground into meal.

The third tool is a polished stone ax.

The fourth tool is called by a word in Hopi which means "wood old man." It is a short-bladed tool for digging up weeds and sage brush. It is also used as a hoe.

A fifth tool is a three-pronged rake made of wood.



9. TRADITIONAL HOPI WEAPONS

In this picture are two traditional Hopi weapons. At top is the bow and a quiver with arrows. The quiver is a case for carrying the arrows. Below the quiver are two throwing clubs.

The Hopi used to hunt for food and sport. Even in this century the Hopi hunted antelope, deer, and mountain sheep, and sometimes even a mountain lion or bear. Today there are many sheep on the land and more people There is less game to hunt for food. When the Hopi does hunt for food, he uses a gun, bought at the trading post.

The Hopi still hunts for sport. He hunts mainly rabbits and other small game. He stalks or runs the rabbit down and kills it with his club. He also traps birds in nets.

A ritual sport is the capture of live eaglets. A Hopi youth climbs the rocky crags on which the eagles build their nests. He robs the eaglets from their nest, and sometimes even captures the mother eagles with his bare hands. The eaglets are used in the kachina ceremonies to bring good harvest.

10. TRADITIONAL HOPI DRESS

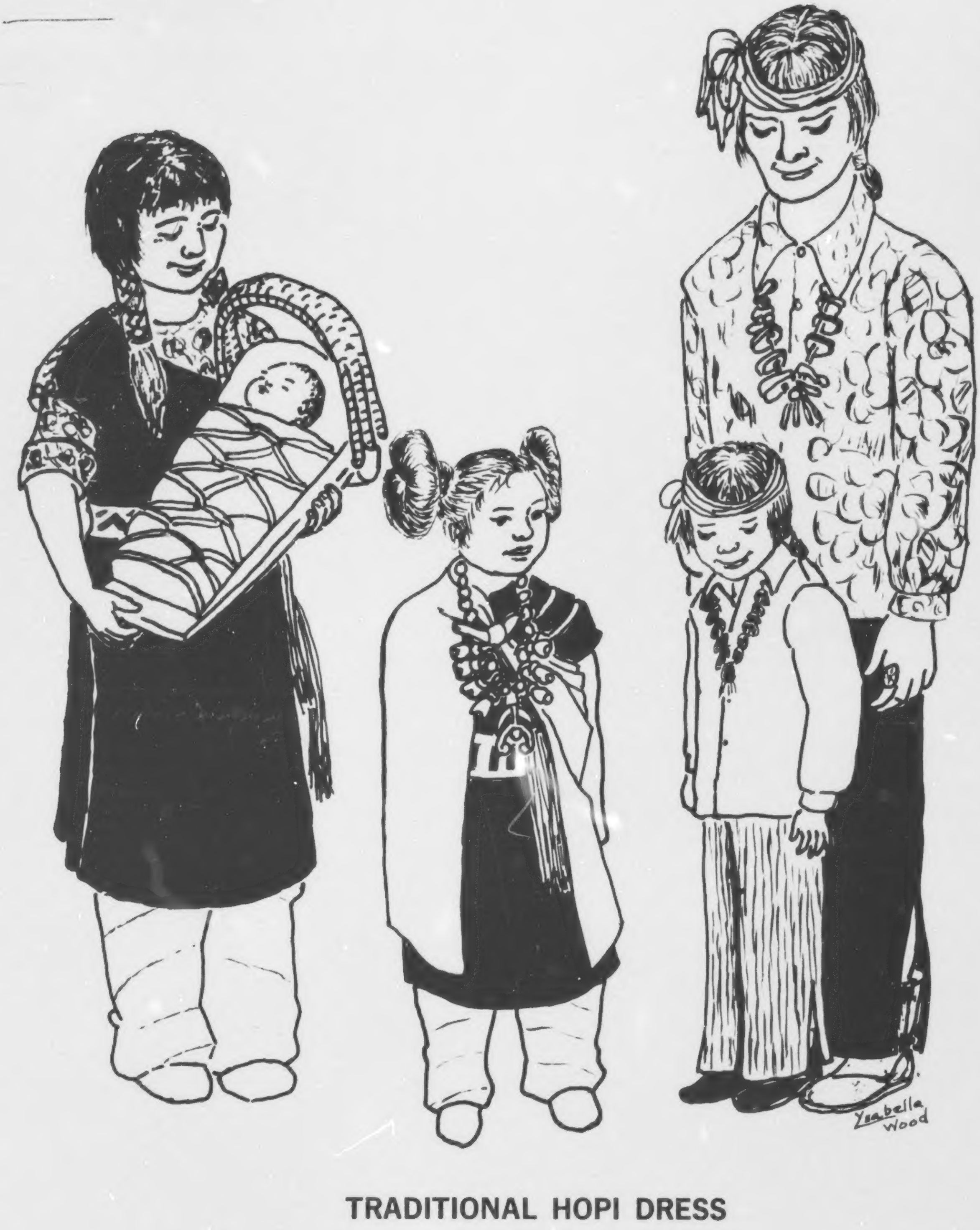
In this picture there are a mother, baby, daughter, father, and son. They are wearing traditional dress. Traditional means an old way of doing things which has been passed on from old people to younger people.

A girl's hair is allowed to grow long. In the picture the girl's hair is dressed in the form of the bolini, or butterfly whorls. A girl does not wear her hair in bolini until she is about twelve years old. The bolini shows that she is unmarried. Her mother is wearing her hair in two braids, one on each side. This form is called "twisted water." Married women do not wear their hair in butterfly whorls.

The boy's hair is allowed to grow long. It grows down the back until it is long enough to be done up in a roll.

The woman's dress, called a manta, is made of wool. She is wearing moccasins and leggings made of buckskin. The girl is dressed like her mother. She is also wearing a cloak tied in front.

The father and son are wearing pants and shirt made from cotton cloth. They are also wearing a colored cotton bandana and buckskin moccasins.


Ysabella Wood

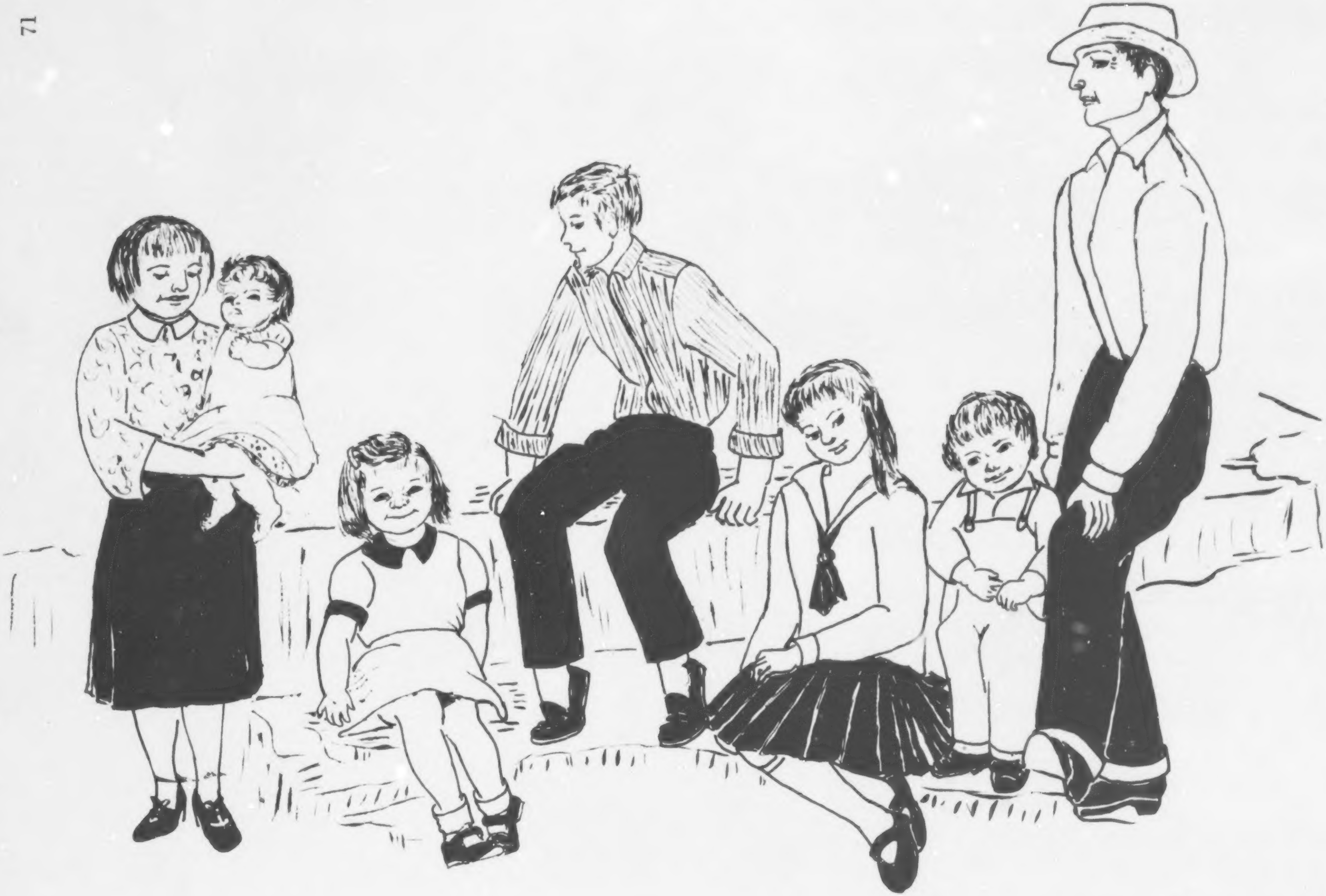
TRADITIONAL HOPI DRESS

11. HOW THE HOPI DRESS TODAY

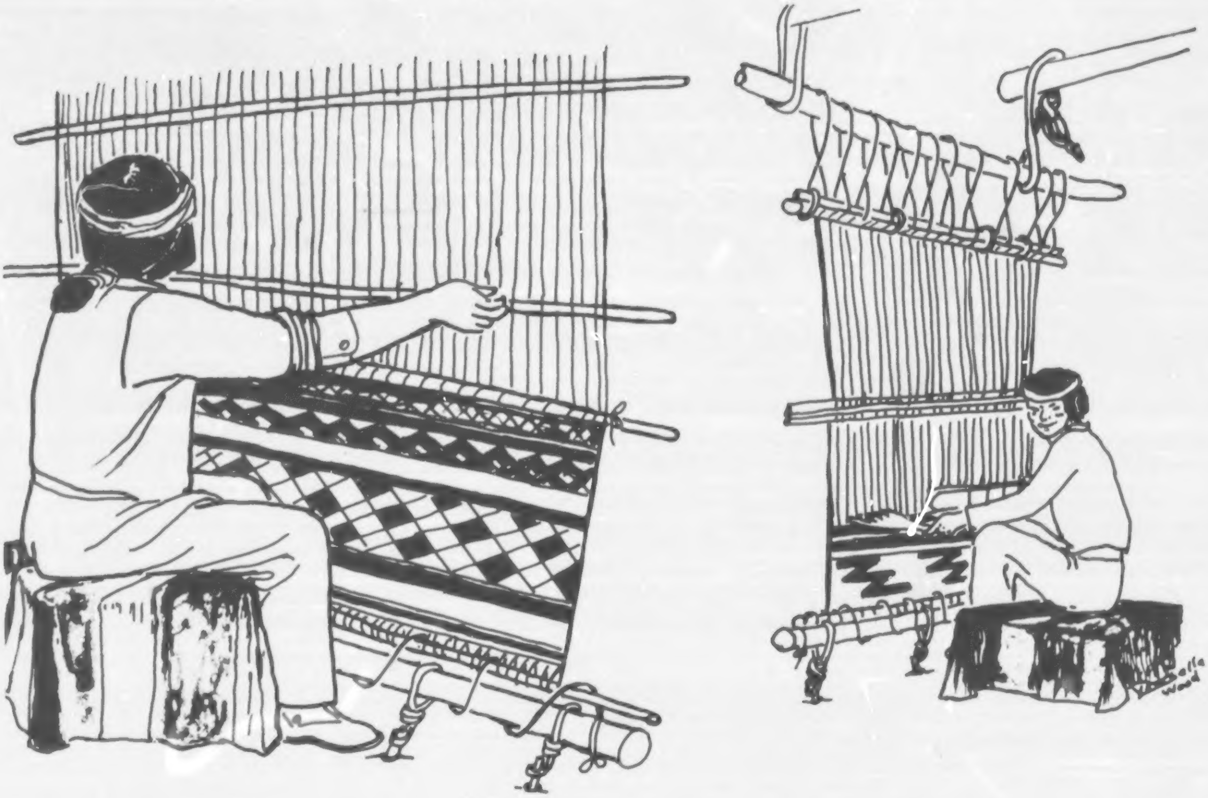
The Hopi wear clothes like that of farm families in the West.

The men wear blue jeans or khaki pants. They wear shirts open at the collar. Sometimes they wear denim jackets. They wear straw or wool hats. They wear shoes.

The women wear dresses. They wear shoes or sandals. The children are dressed like other farm or ranch children.



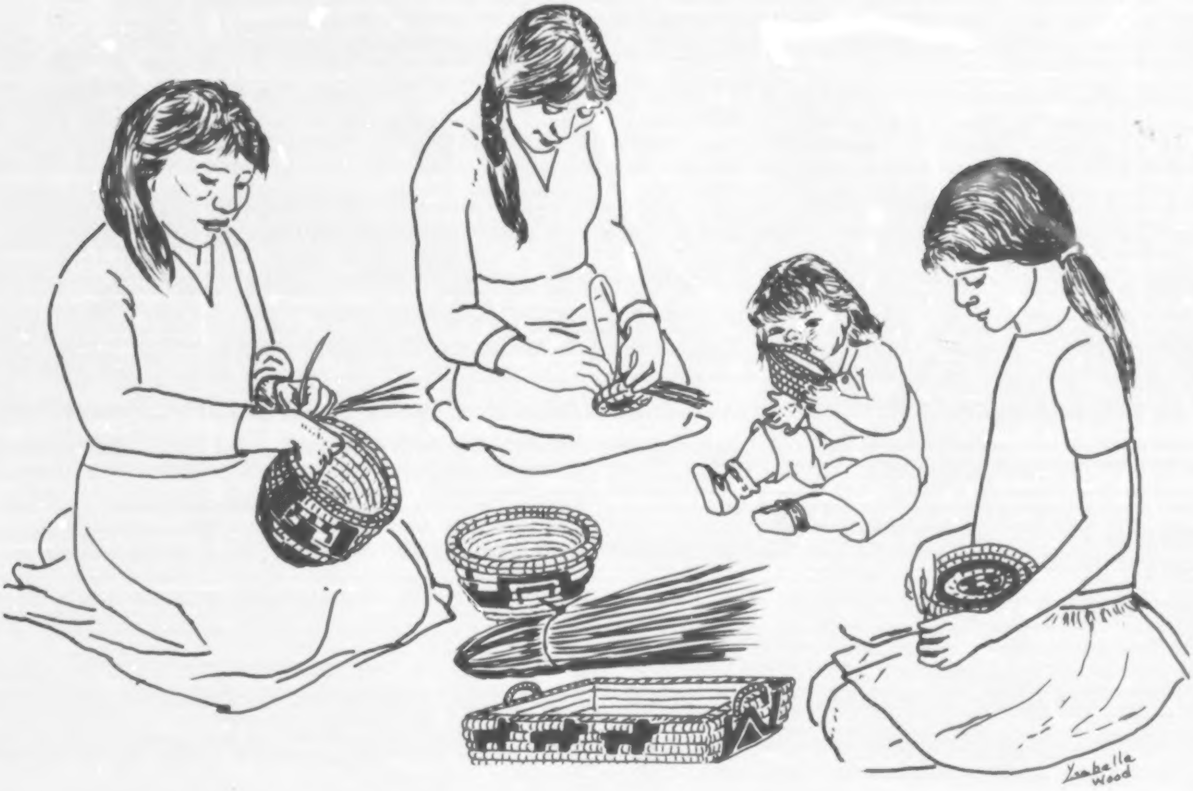
HOW THE HOPI DRESS TODAY



12. HANDICRAFTS: MEN WEAVING

Men as well as women work at crafts. Among the things men make are moccasins, kachina dolls, and jewelry.

The men also weave. In this picture, two men are working at a vertical loom. It consists of threads held tightly between a top and bottom beam. These threads go up and down. These are the warp threads. The men are putting in the weft. The weft (also called woof) is the filling that is put in crosswise.



13. HANDICRAFTS: WOMEN MAKING BASKETS

Like the men, the women also are craft workers. They do not spend full time at handicrafts. Practically all women make either pottery or baskets. Some villages specialize in a special craft.

Painted pottery is only made in the villages of the First Mesa. Coiled baskets are made only by the women in villages of the Second Mesa. Wicker baskets are made only at the Third Mesa. It is thought that making certain kinds of baskets in a village is a very old custom.

14. IRRIGATED GARDENS AT THE BASE OF THE MESA

The Hopi are mainly farmers. The men plant corn, the women work the garden plots.

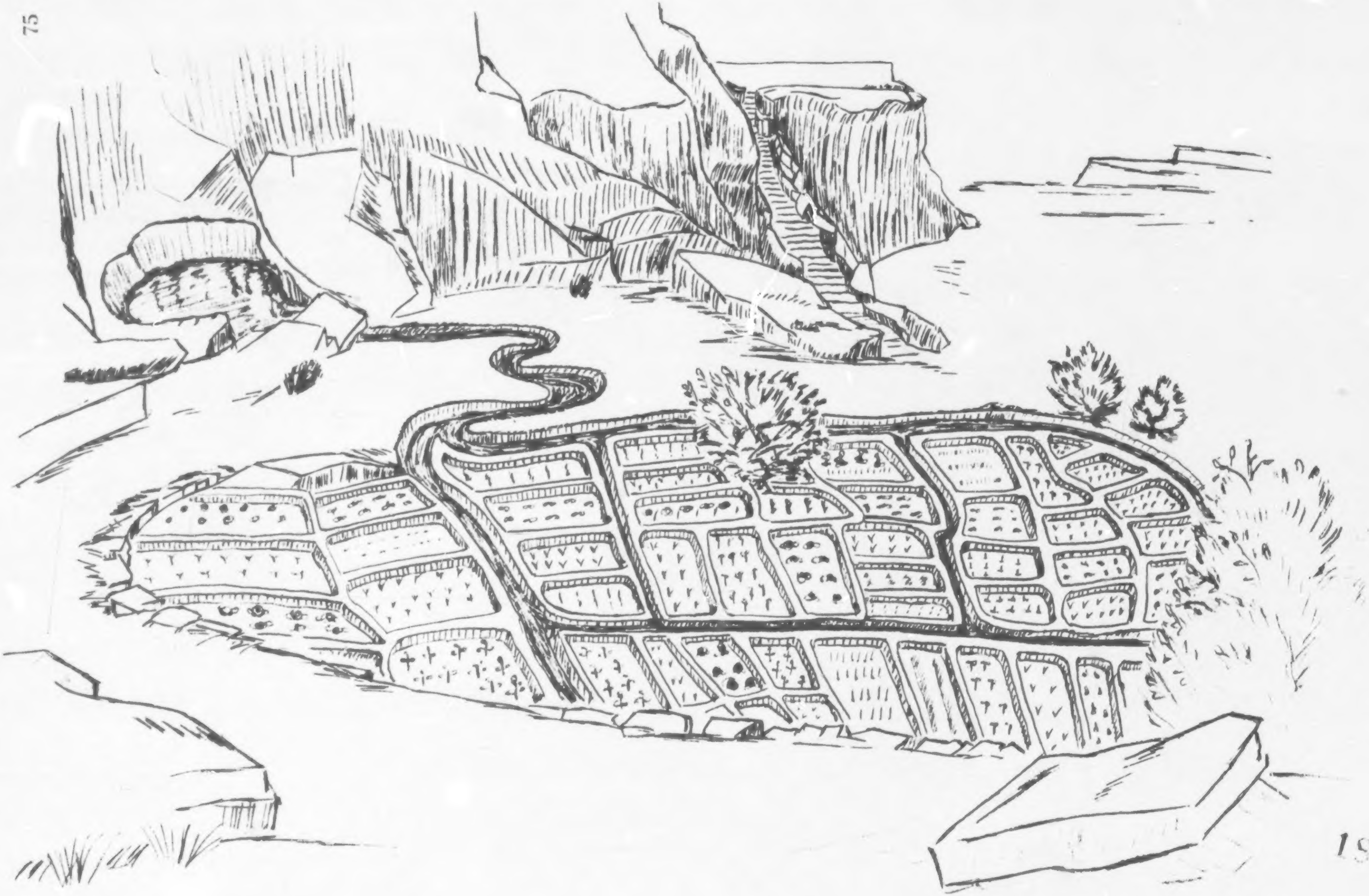
There is not enough rainfall to grow gardens without irrigation. Irrigate means to get water to plants. The gardens are at the foot of the mesa. Here the water seeps out of the sandstone. Here there are springs.

The water is caught in a cistern. A cistern is something to hold water. The Hopi cisterns are made from a rock bottom and built up walls of rock.

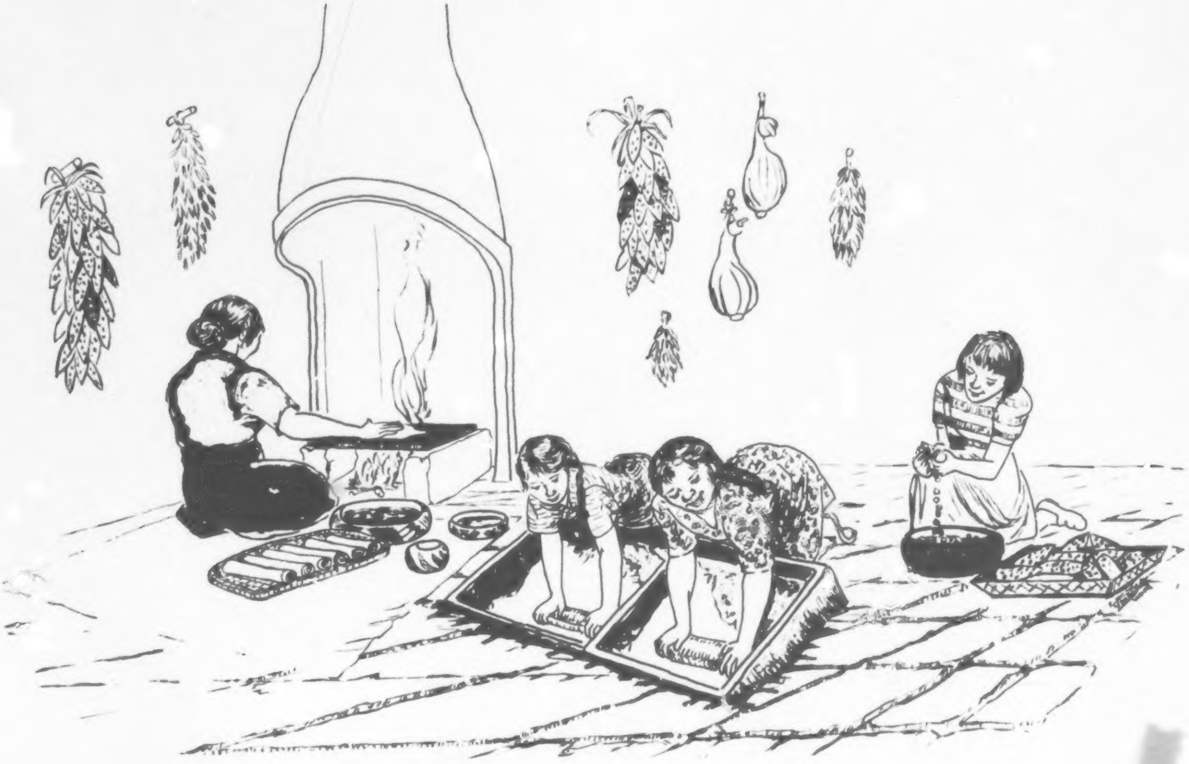
The gardens are in little plots. The plots form little terraces. Where the gardens are below the spring, the water is let out of the cistern into a main channel. It is carried to the various plots by cross channels.

Some of the garden plots are above the level of the springs. The water must be carried up in jars by hand.

The seepage which is not used for the gardens waters the orchards.



IRRIGATED GARDENS AT THE BASE OF THE MESA



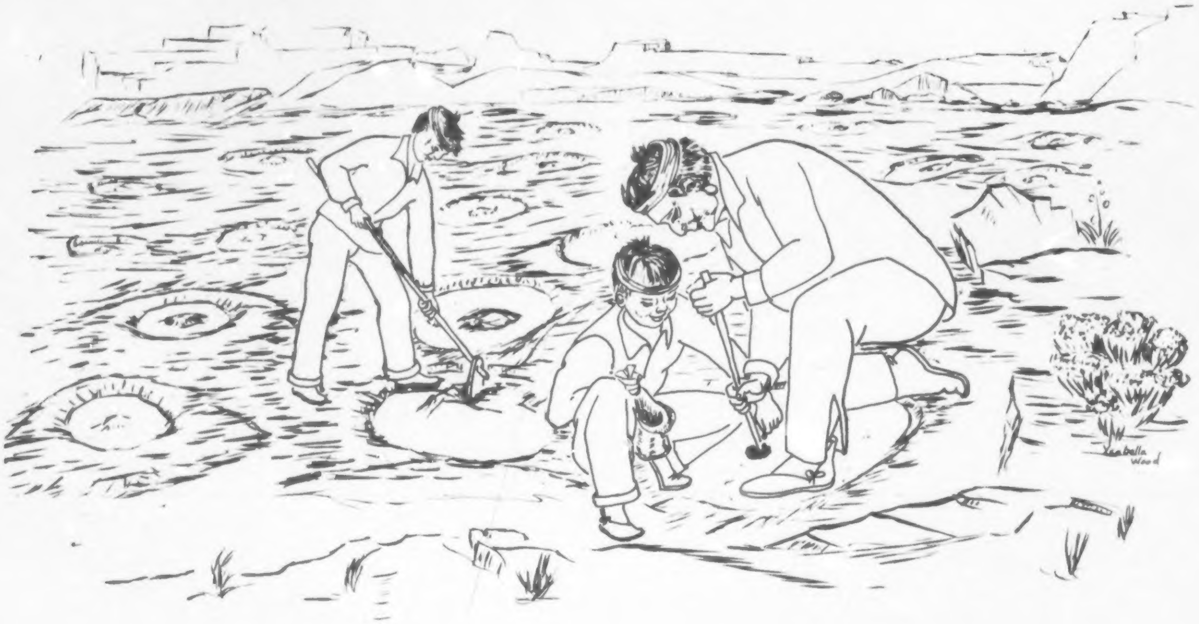
15. DIVISION OF LABOR: WOMEN GRINDING CORN

One of the main tasks of the Hopi woman is to grind corn. Corn is the main food.

The corn is ground by hand. In the picture two women are grinding corn. They are using the metate and mano. Both hands grip the mano. The mano is rubbed back and forth over the metate.

At the chimney a seated woman is cooking piki. The thin batter is poured on a flat, raised stone. Piki is very thin, almost like a pancake.

Hanging from the walls are gourds, dried corn, and dried peppers.



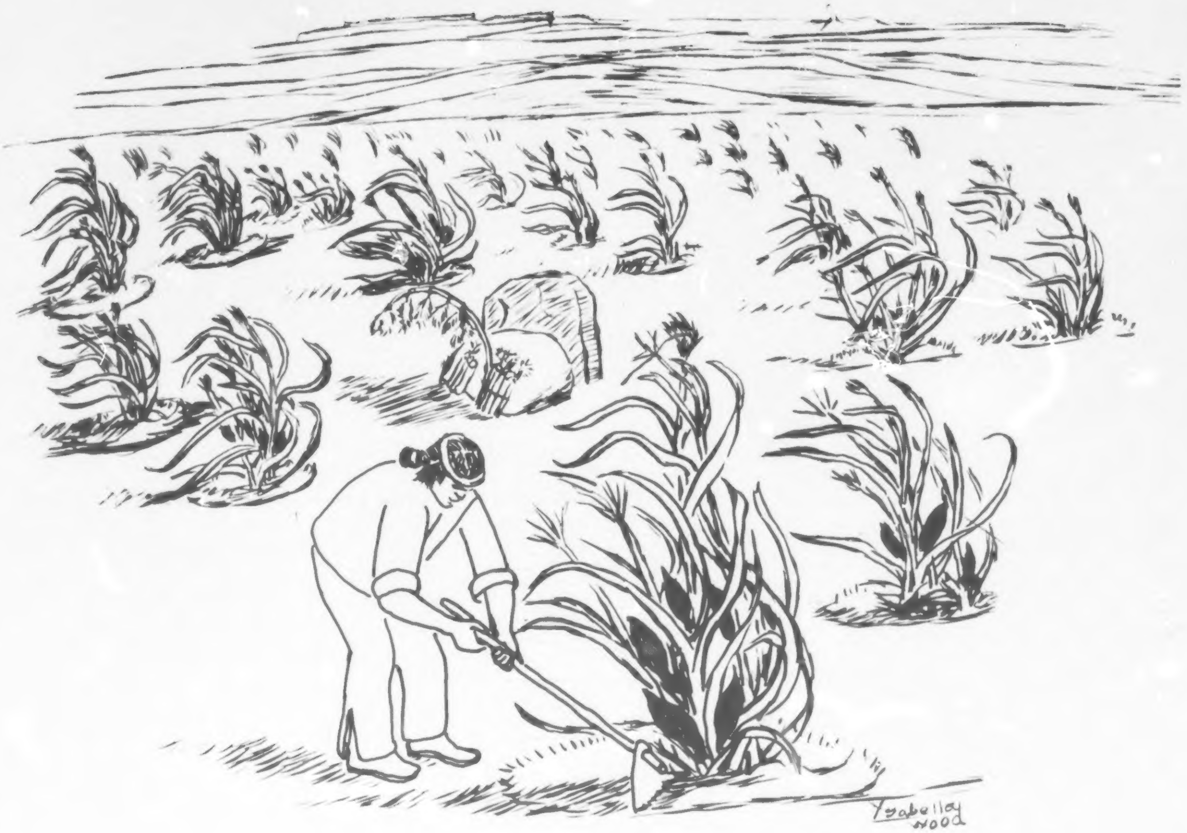
16. DIVISION OF LABOR: A HOPI MAN PLANTING CORN

Among the Hopi, some kinds of work are done on the basis of sex. This dividing up of work is called division of labor. Men do the heavy work. They plant and cultivate the crops. They herd the animals and hunt. They also get water and gather firewood.

Women care for the house, grind corn, cook the meals, and care for the children.

In this picture a Hopi man is planting corn. He digs a hole with a dibble. In each hole he will plant several grains of corn. The field is planted in hills, not in rows. A hill is several seeds planted in a hole. The man is not wearing modern dress.

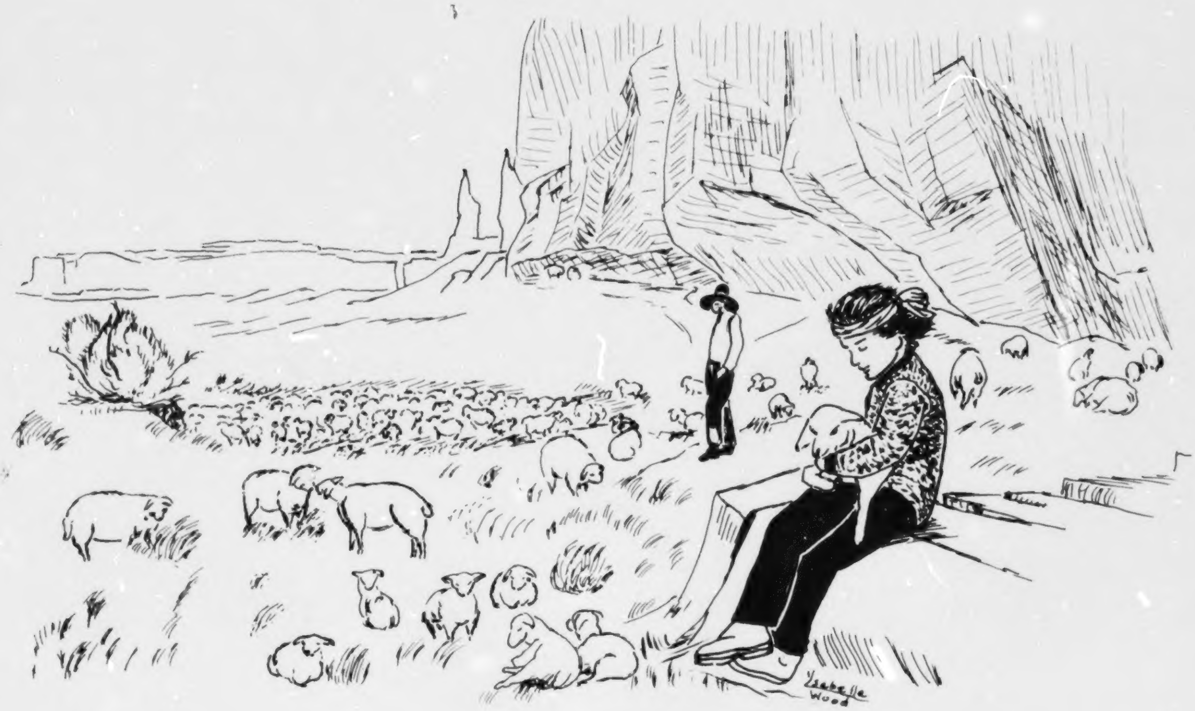
Most Hopi today would use a hoe to dig a hole.



17. HOPI CORN FIELD SHOWING HILLS OF CORN

Corn is the major Hopi crop. It is the main food. It is used in many ways. The women make corn mush, corn bread, hominy, and corn flour for baking. The husks are wrapped around ground meat to make a kind of Hopi tamale. The stalks are fed to the animals.

A Hopi corn field is planted in hills, not in rows. The hills are several feet apart. There is not enough moisture for it to grow in rows. The holes are dug 15 to 18 inches deep. This is so the roots can reach water. The corn does not grow tall. The ears grow close to the ground. Here the clump gives some shade from the hot sun.



18. HOPI HERDING SHEEP

The Hopi borrowed sheep and cattle raising from the Spaniards. Today livestock is a major source of income. The increase in Hopi herds and the pressure from herds owned by other tribes has led to overstocking and overgrazing. Overgrazing means that too much grass is eaten. It does not have time to grow back. This is bad for the soil. It causes more erosion.

Hopi herds are tended by the men. Flocks are small and are mainly kept for wool. Sometimes the flocks are put together, and the men take turns in herding them. The men who have herds divide their time between the village and the herds.

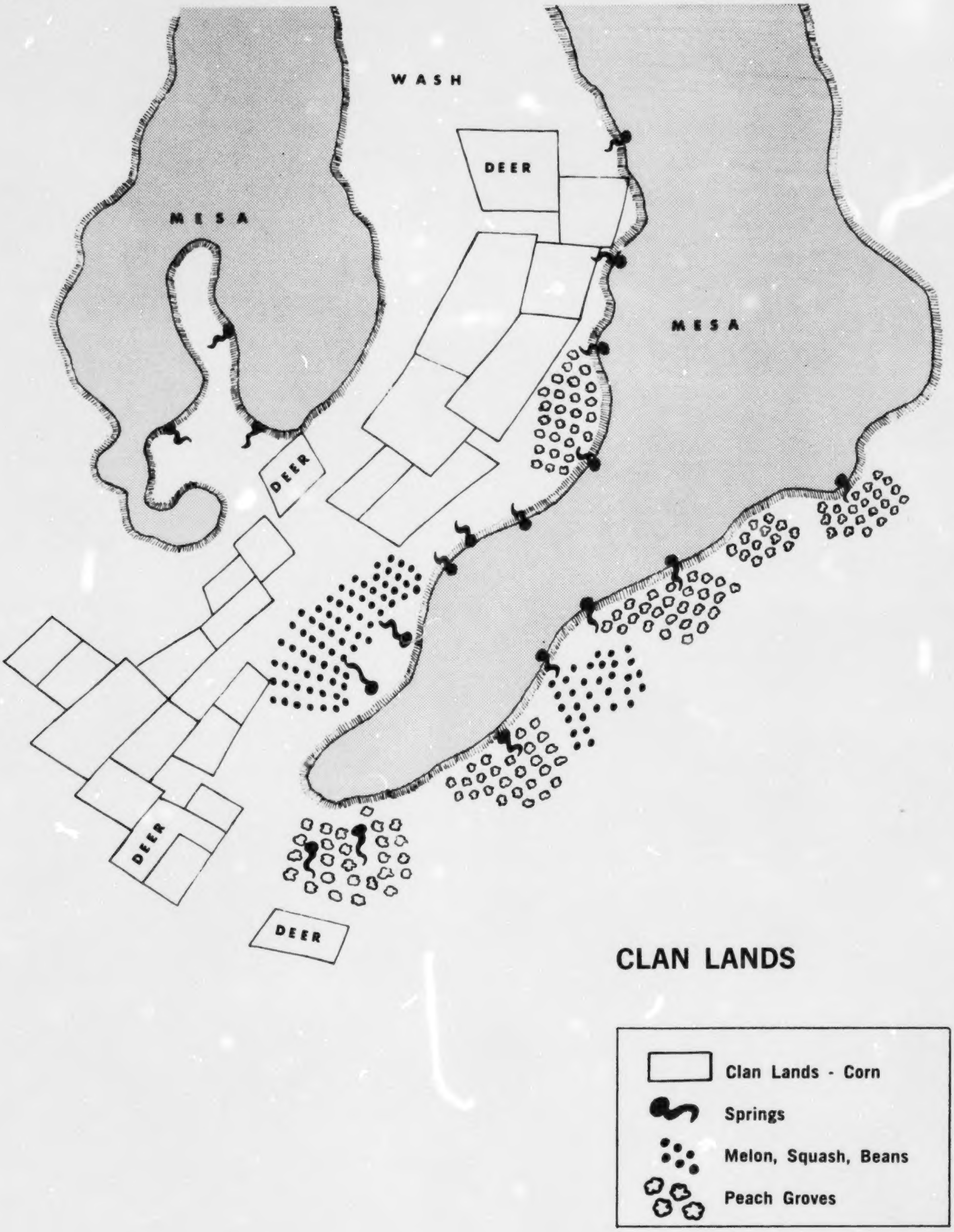
19. THE DISTRIBUTION OF CLAN LANDS: CORN AND GARDEN PLOTS

This sketch shows the clan lands at First Mesa over thirty years ago.

At the foot of the mesa are the orchards and garden plots. Here are the springs for irrigation of the melon, bean, and squash plots. Here there is enough water seepage for the peach groves.

The clan lands are shown in the washes. Corn is mainly planted in the clan lands. The land is owned by the clan. The clan lands are not all together. This is because if there is flooding in one place the crop may be safe in another. Families work fields in the different clan sections.

The clan lands are used for flood-water farming. There is heavy run-off from the mesas. Sometimes the water is several inches deep. Some of this water soaks into the ground. It is here the corn is planted.


WASH
MESA
MESA
DEER
DEER
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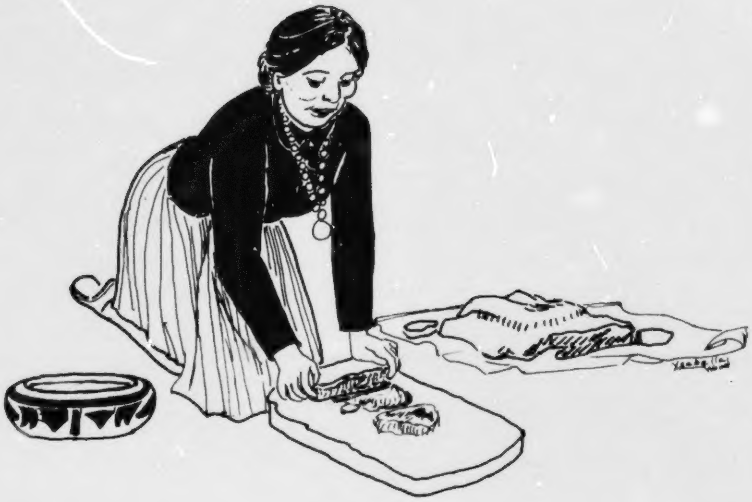
DEER
Clan Lands - Corn
Springs
Melon, Squash, Beans
Peach Groves

CLAN LANDS



Preparing the Clay

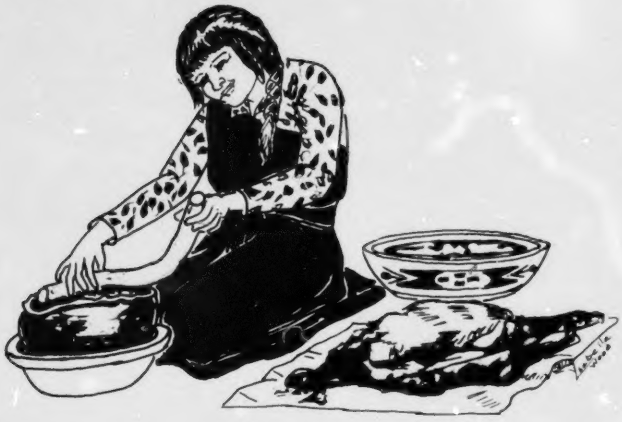
20. EXAMPLES OF HOPI HANDICRAFT

Handicrafts are very important in Hopi culture. They are also a source of income. The Hopi keep only a small part of what they make. Most of their crafts are sold or traded.

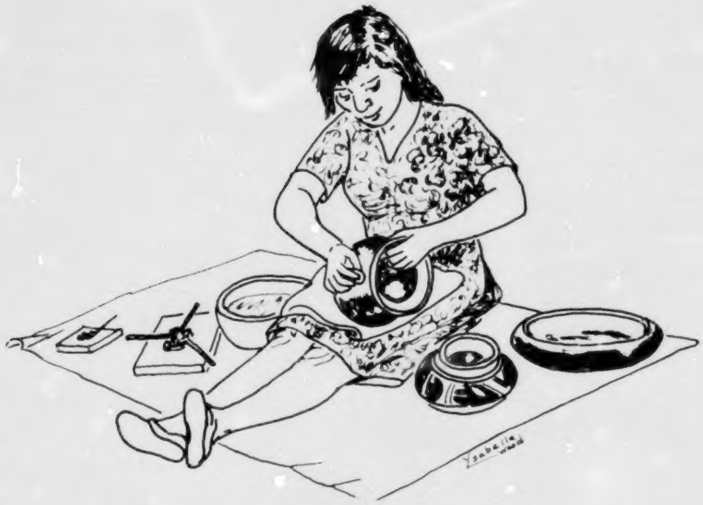
The art of making painted pottery was once common in all the Hopi villages. It died out. It was revived at the First Mesa seventy years ago.

The pottery is not made on a wheel. It is made by the coil method. This consists of taking the clay, rolling it into long, thin rolls, and coiling the roll around and around to the desired shape. It is pressed together while damp.

Much attention is given to the design of the painting. No two pots are ever made alike. Each potter prides herself on the originality of her designs.


Ysabelle Wood

Making the Pot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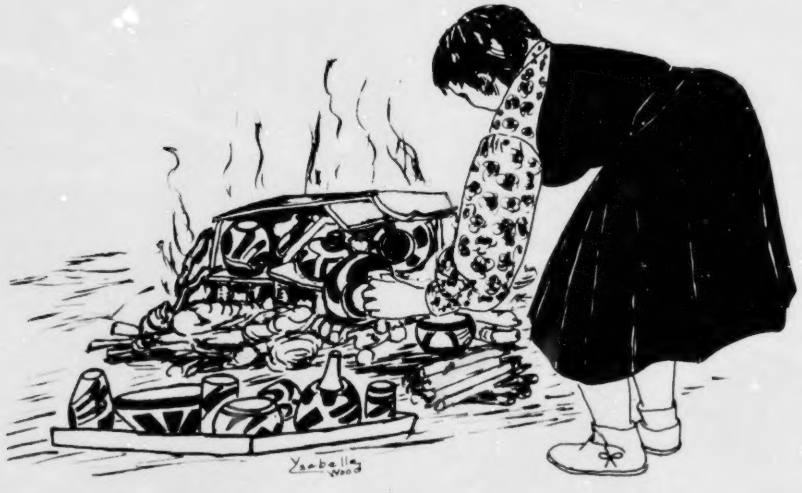
Decorating the Pot


Ysabelle Wood

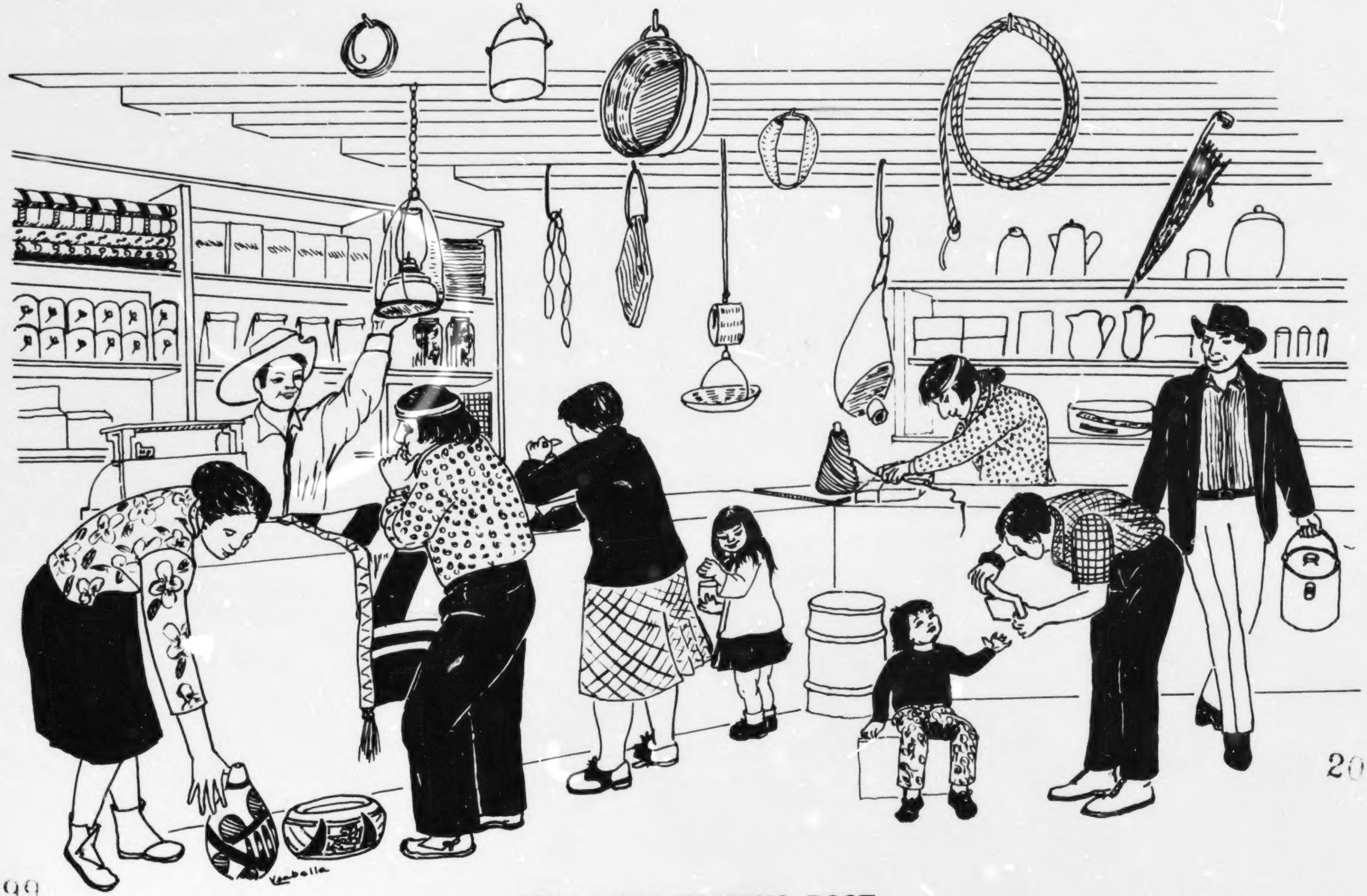
Firing the Pot to Make it Hard

21. THE HOPI TRADING POST

The trading post on the Hopi reservation has an important place in Hopi life.

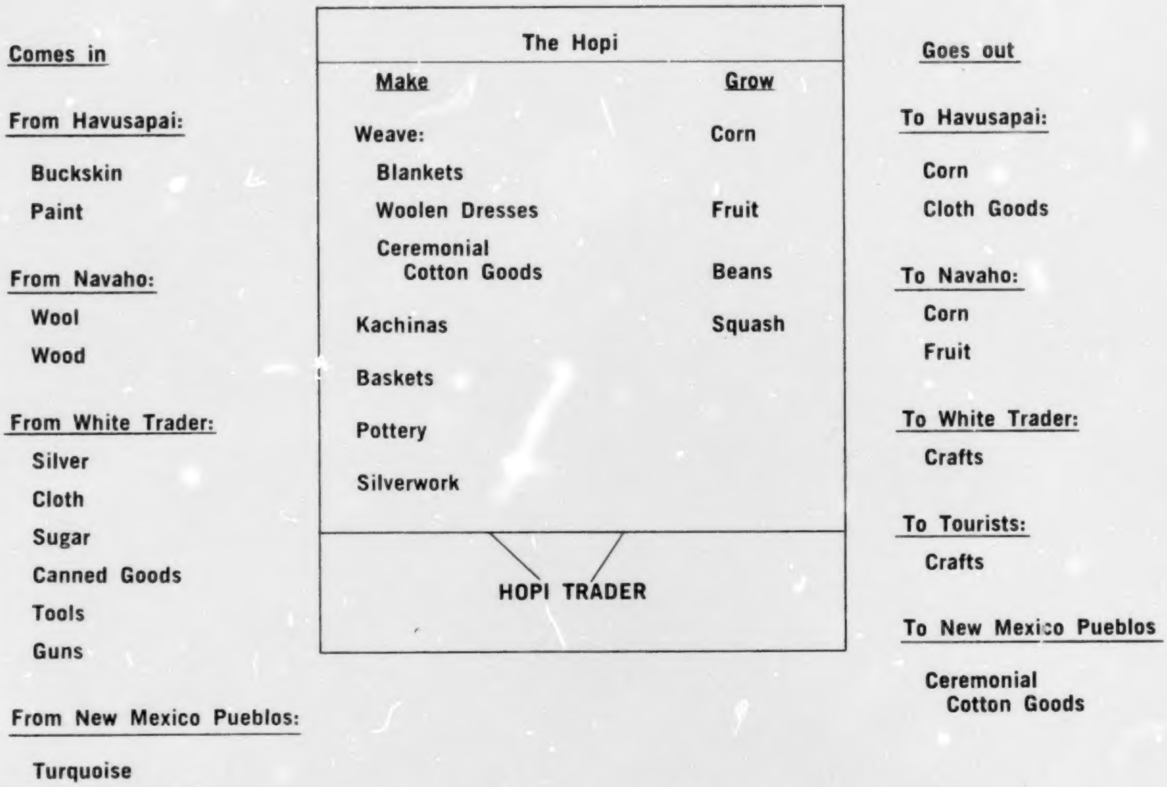
It is a place to buy things made by western technology. It is a place to sell Hopi goods. It is a place to exchange Hopi goods for things they need. It is called a trading post because in the old days the Indians did not sell their goods for cash. They traded their goods for the white man's goods.

The trading post is also a place to visit and talk. It is like an old fashioned store. People do not just come to buy and sell. They come to talk and visit.



THE HOPI TRADING POST

DIAGRAM OF HOPI TRADE

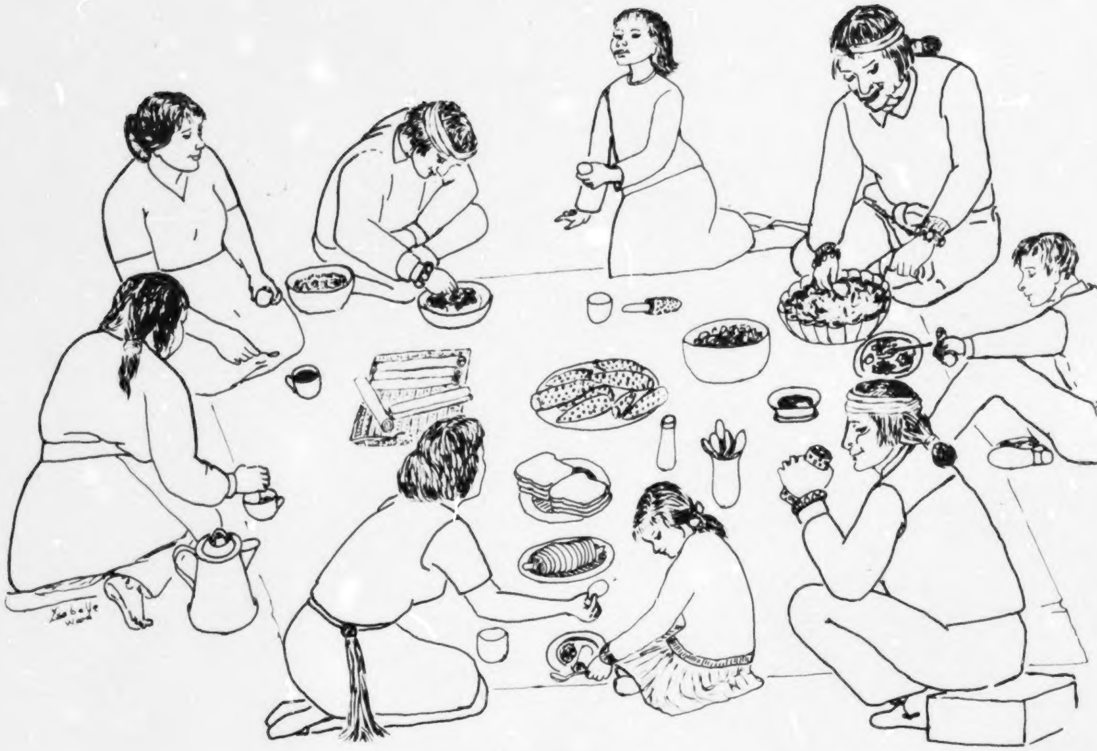

Comes in
From Havusapai:
Buckskin
Paint
From Navaho:
Wool
Wood
From White Trader:
Silver
Cloth
Sugar
Canned Goods
Tools
Guns
From New Mexico Pueblos:
Turquoise
The Hopi
Make
Weave:
Blankets
Woolen Dresses
Ceremonial Cotton Goods
Kachinas
Baskets
Pottery
Silverwork
Grow
Corn
Fruit
Beans
Squash
HOPI TRADER
Goes out
To Havusapai:
Corn
Cloth Goods
To Navaho:
Corn
Fruit
To White Trader:
Crafts
To Tourists:
Crafts
To New Mexico Pueblos
Ceremonial Cotton Goods

22. THE WAY OF HOPI TRADE

Hopi trade is not just with the Hopi trader at a trading post. Things are traded with many people. Look at the diagram above. The column on the left shows what the Hopi get. The large block in the middle shows what the Hopi make and grow. The column at the right shows what the Hopi send out.

Read the diagram this way. From the Havusapai the Hopi get buckskin and paint. They send the Havusapai corn and cloth goods. From the Navaho the Hopi get wood and wool. They send the Navaho corn and fruit.

Note that some trade is only with the New Mexico pueblos. This trade is in ceremonial dress. Hopi men weave ceremonial dress from cotton. Only cotton dress is used in pueblo ceremonies.



23. THE HOPI FAMILY AT A MEAL

Hopi families are called extended families. This means that the family unit is bigger than the small family consisting of father, mother, and children. The extended family consists of grandparents, uncles, aunts, and other relations.

The food is placed on mats on the floor. Most of the food is eaten with the fingers. In some homes, there are tables and chairs. Knives, forks, and spoons are sometimes used.

24. HOPI CHILD REARING

The Hopi want children. Children are very much desired. If there are no children, the clan will die, the villages will become empty, and there will be no more Hopi.

Hopi children are spoiled and pampered when they are little. But the discipline becomes very strict as they become older. Hopi parents and adults do not use much physical punishment. They teach the children that they must have a "good heart." Having a good heart means they must learn and follow the Hopi way of thinking and behaving.

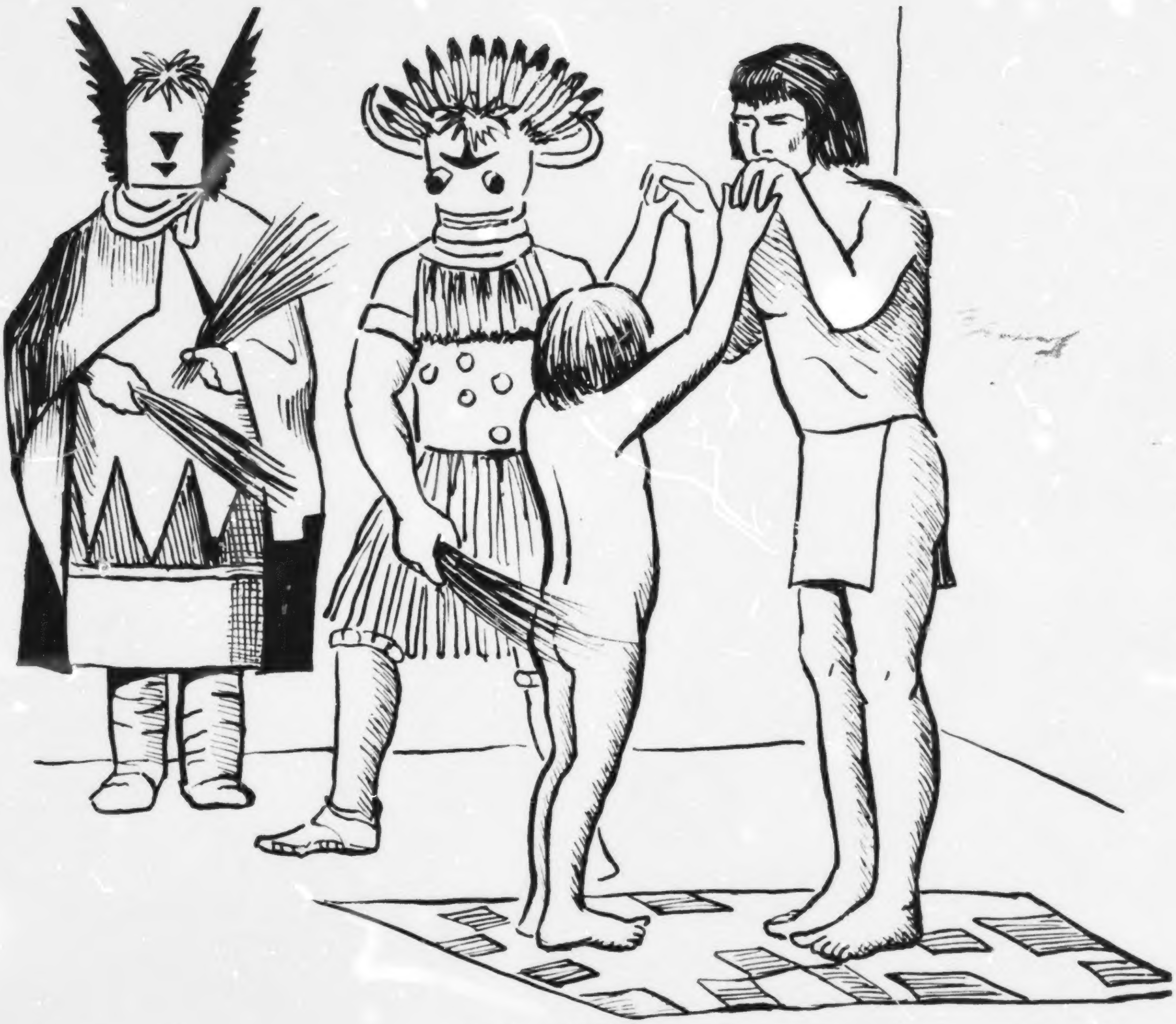
When a Hopi baby is born, he is bound on a cradle-board. Here he spends almost all of his first three months. He is cared for mainly by his mother.

But Hopi children are reared in a big family, called the extended family. All of the adults and even the older children feel responsible for teaching him how to behave and act like a Hopi. Relatives agree on how children should be fed and treated. He is not dependent on just his father and mother. Thus the Hopi child comes to identify himself with all his relatives, not just his mother and father.

After a baby is a few months old, he may be taken outside. He is frequently carried by his mother in a shawl on her back. During his first year, he is cared for mainly by his mother and female relatives. When he gets older, he is cared for by an older sister, if there is one.

Until children are six years old, they learn mainly from their female relatives. A girl continues to get her education from the women. When a boy becomes six years old, however, he learns mainly from his father and male relatives.

Children learn mainly by watching their parents and being told what they must do. Look through the pictures of the Hopi and you will see many examples of how Hopi children learn by imitation. Special initiation ceremonies are held for children when they become about twelve years old.



Kachina Initiation Ceremony

25. TRAINING THE HOPI BOY

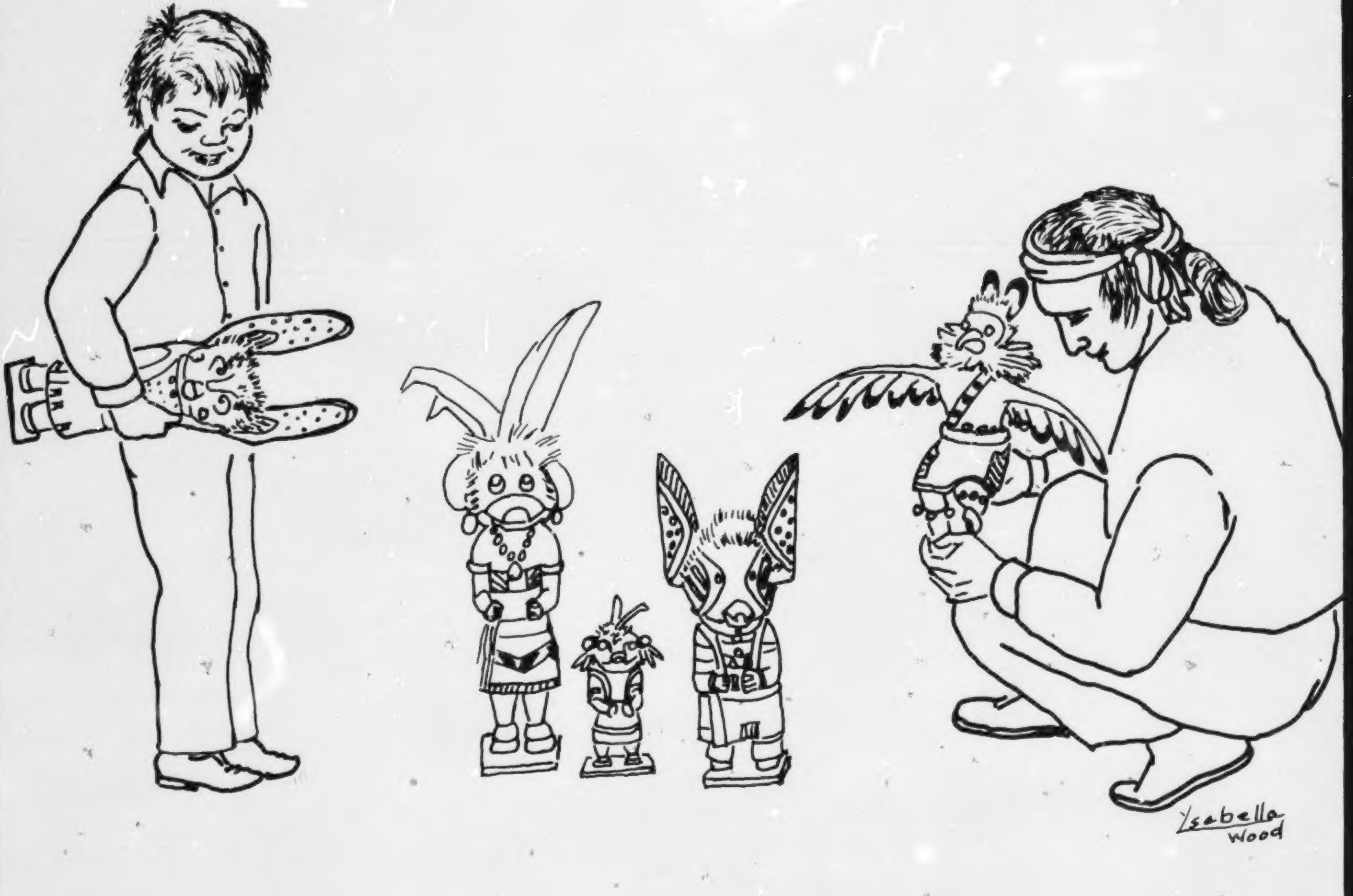
The Hopi boy is taught by male relatives. Boys help their fathers in the fields and in the care of sheep. In this way he learns how to make a living. When he marries he will be able to feed his family.

A special uncle, the mother's brother, teaches the boy about the religion and the ceremonies. This uncle sees that the boy learns the proper form of behavior for a Hopi. In this picture the mother's brother is holding the switch. He is teaching the boy about the kachinas.

26. KACHINAS

Kachinas are an important part of Hopi religion. They are the spirits who live in the underworld. They control the success of the crops. The Hopi believe that in ancient times the kachinas took part in ceremonies. Now Hopi men dress up as kachinas. The Hopi teach the children about kachinas by making dolls like the different kachinas. Some of the kachina dolls are sold to tourists.

In January, men dressed as kachinas dance in the ceremonies. These ceremonies are to get ready for the planting of the crops. In July the kachinas return to their homes. Children like the kachinas. The kachinas give gifts to them before they leave.


Ysabella
Wood

KACHINA DOLLS

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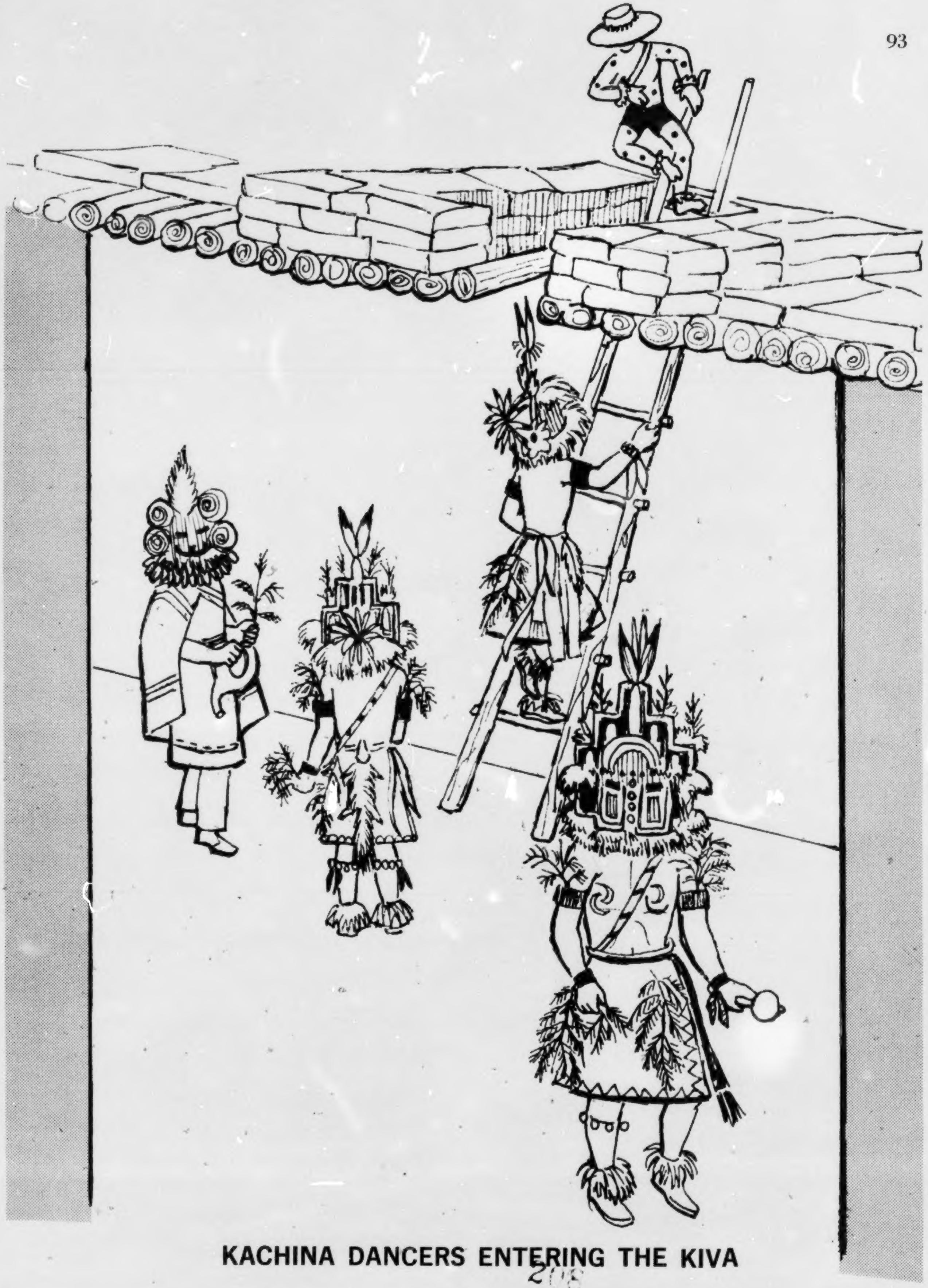
27. KACHINA DANCERS ENTERING KIVA

The kiva is an underground ceremonial chamber. Part of all the kachina ceremonies are conducted in the kiva. In the picture kachina dancers are about to descend into a kiva after the end of the Niman or Home Dance.

The Niman Dance is held in July. It is carried on by a ceremonial society. It emphasizes the return of the kachinas to the mountains where the heavy thunderstorms fall. At parting the kachinas give the children gifts. Among the gifts are sweet corn from the first planting. This sweet corn symbolizes the main harvest which comes in September.

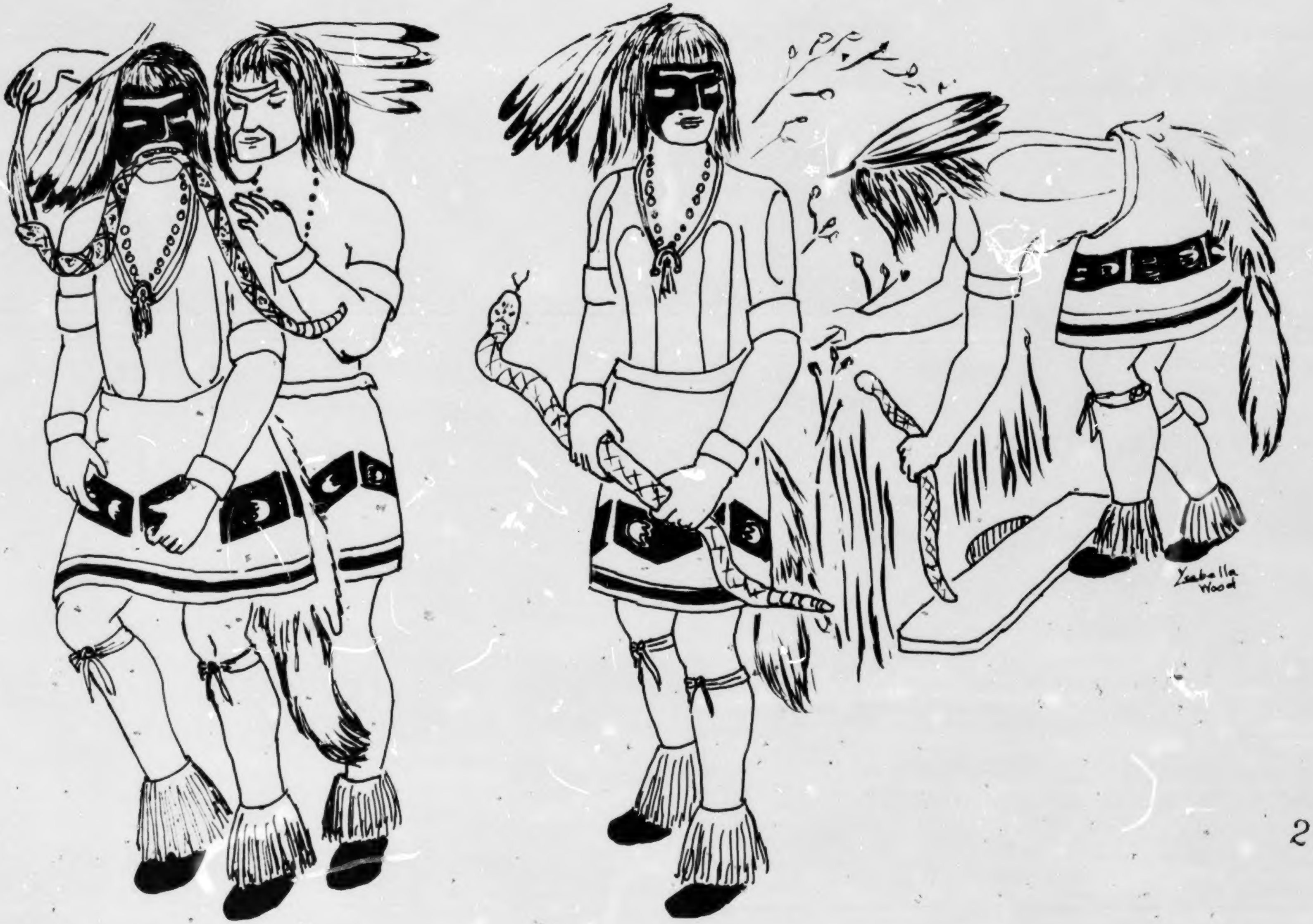


KACHINA DANCERS ENTERING THE KIVA

28. HOPI RAIN MAKING CEREMONY

During August, September and October ceremonies are held to bring rain and help the crops grow. Summers are very dry. The summer thunder storms are needed to make the corn grow. The Hopi need a good harvest so they can have food for the winter.

The most famous of the rain making ceremonies is the Snake Dance. It is put on by the Snake and the Antelope Societies. They believe that after the ceremony it will rain.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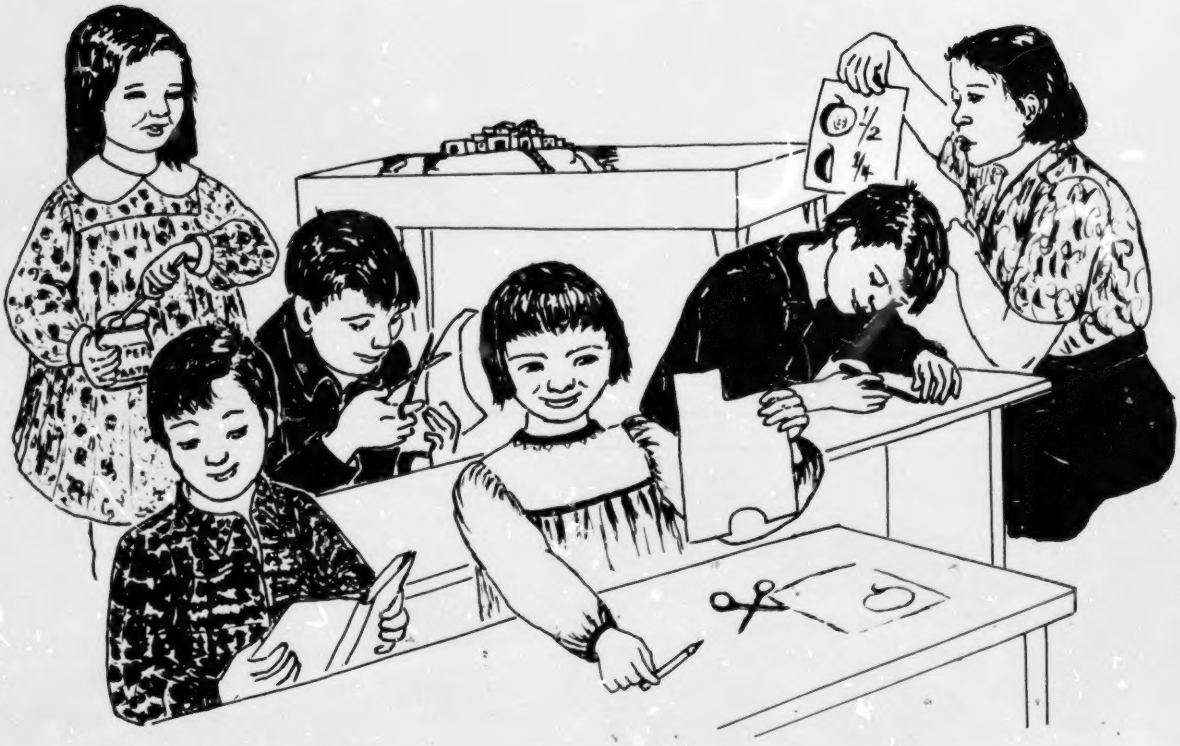
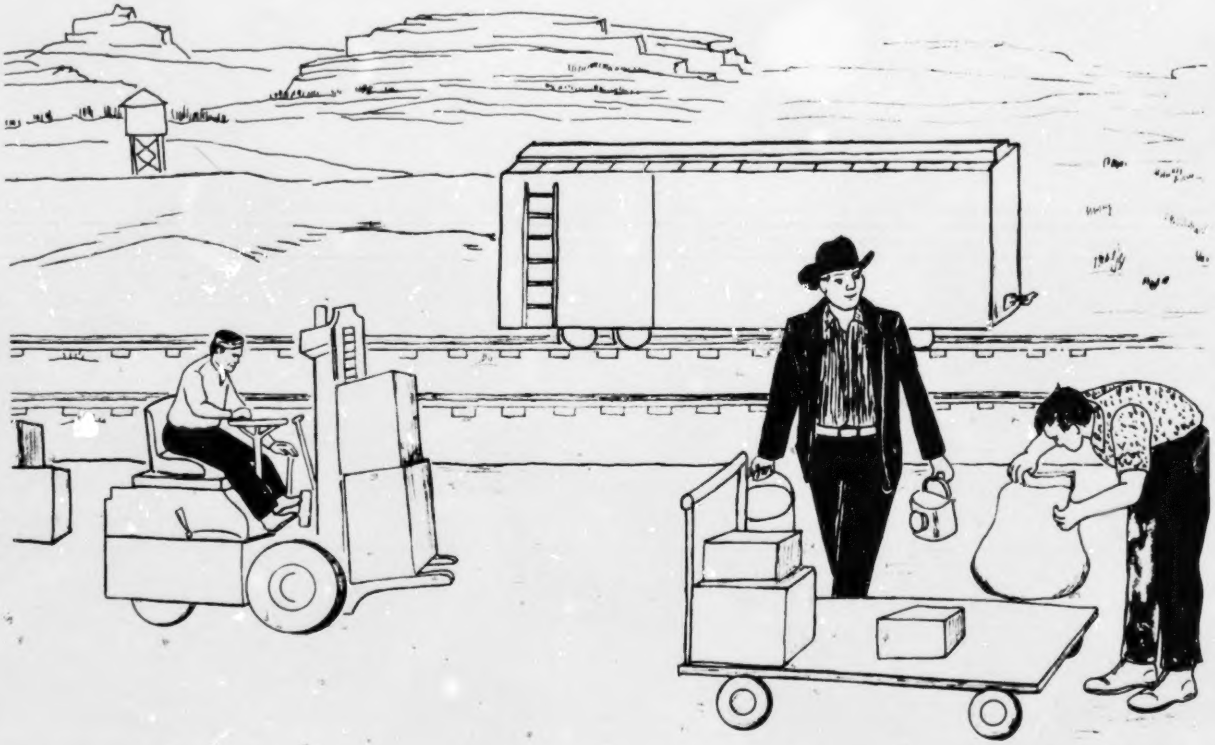
HOPI SNAKE DANCE



29. HOPI CHILDREN IN A MODERN SCHOOL

The public school is one way in which Hopi children learn about non-Indian ways. Education is provided through the eighth grade on the reservation. High school education is provided in schools off the reservation. Education is not compulsory. Hopi leaders urge their people to send their children to school.

Education works two ways for the Hopi. It makes it possible for them to make better adjustment to the modern world. At the same time, it weakens the importance of traditional Hopi ways. Education for the boys in the past has been less meaningful than for the girls. One reason is that much of the girls education--training in sewing and in household tasks--has been more useful. The Hopi girl has a more secure place in Hopi society. The boy, on the other hand, knows that he has to return to the fields of his mother or his wife unless he seeks work outside of Hopi country.



The Hopi Work at Many Jobs

30. HOPI WORKING OFF RESERVATION

Some Hopi men seek jobs off the reservation. Many of them work at modern jobs. Others work in shops making Hopi handicrafts for tourists.

31. THE FUTURE OF THE HOPI

The Hopi of today live in two cultures. Part of their culture is from the past. It is like the culture of their Pueblo ancestors in the Formative Stage hundreds of years ago.

Part of Hopi culture is in the present. The Hopi use new farming tools, wear modern clothes, go to school, and work at jobs off the reservation. Such changes in ways of living bring about changes in the traditional Hopi culture.

The Hopi are few in number. Even though they live in a hard to reach place, it is difficult to keep the Hopi ways. However, they have kept the old ways of doing things more than most Indians in the United States.

Today anthropologists can study traditional Hopi ways. They can also study how contact with white culture brings about changes. In another hundred years Hopi culture may be something people read about only in books.

The Development of Man and His Culture:
New World Prehistory

Pupil's Study Guide
Second Grade

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Publication No. 33
Anthropology Curriculum Project
Athens: University of Georgia
March, 1966

Experimental Material, 1966
Not for general classroom purposes

To be used in connection with "A Sequential Curriculum in Anthropology for Grades 1-7."

The curriculum development reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education, and Welfare, under the provision of the Cooperative Research Program (Contract H-128/OE 4-10-204).

THE DEVELOPMENT OF MAN AND HIS CULTURE

NEW WORLD PREHISTORY

Anthropology will give you many new ideas. It provides many new words. It enables you to think about yourself in a new way. Also, it will give you new ways to think about other people.

This study guide will help you get the most from the Unit, "The Development of Man and His Culture." Each chapter has the following information.

Word list. It is important to learn the anthropological words. To think about people in the way that an anthropologist does, you must learn the words he uses.

Key ideas. These will help you study the most important things in each chapter.

Things to do. The things to do will help fix in your mind the key ideas and words. You may think up other things which you want to do.

Thought questions. These cannot be answered directly from any one part of the text. To find answers, you will have to apply the knowledge learned.

Review questions. These will help you check to see how well you know some of the ideas in the unit.

Vocabulary. On pages 7-11 of the study guide, there is a vocabulary list. It tells what the anthropology words mean. It also tells what some other words in your book mean.

Study Guide. Before studying a chapter in your book, read the study guide. This will tell you what the chapter will be about. It will help you in your reading of the chapter.

Pupil Text. Read the pupil text and then reread the study guide again. It will help you to understand and remember what you have read.

Completion sentences. There is a set of sentences in the back of the study guide. Your teacher will explain how to use this set of completion sentences.

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I. ARCHEOLOGICAL METHODS

A. Introduction

The material on archeological methods will show you how an archeologist studies about prehistoric people. The chapter will tell you about the tools an archeologist uses. It will tell you about the methods he uses. Learn the meaning of the words in the vocabulary. The vocabulary contains many archeological words. You should learn these words so that you can understand the work of an archeologist.

B. Anthropology words I must use:

absolute dating
archeologist
archeology
artifacts
burial site
calendrical dating
carbon 14 dating
cemetery
ceremonies
dendrochronology
excavate
excavation
glyph
habitation
inhabit
inorganic
interpret
laboratory
organic material
preservation
preserve
publication
quadrant
relative dating
restoration
site
stela
strata
stratigraphy
survey
trenching
vertical

C. Key ideas I am to look for and learn about:

1. What is an archeologist?
2. What is archeology?
3. How do archeologists study about cultures of long ago?
4. How much can an archeologist find out about cultures of the past?

D. Things I can do:

1. Get some tools an archeologist would use. Ask some friends to help. Show the tools to the rest of the class. Tell how an archeologist would use them.
2. Draw a picture of an archeologist digging. Show the tools he would use.
3. Think about the things that are left in a city dump. With the help of your teacher make up a story. The story would be about an archeologist who would dig in your city dump some time in the future. Could he tell how you and your friends lived?

E. Questions to help me think:

1. Why is the work of an archeologist important?
2. Can an archeologist find out all about a culture from the things he digs up?
3. Why should an archeologist be careful when he is digging? Why should he dig very slowly? Why should he look at everything he finds?
4. Why should an archeologist tell other people about the things he finds?

F. Review questions:

1. What is archeology?
2. What do archeologists study about?
3. What tools do archeologists use?
4. How much can archeologists learn about cultures of long ago?

II. NEW WORLD PREHISTORY

A. Introduction

Indians had been in the New World many thousands of years before the white man came. Some of them had built large and beautiful cities. Some of them were still hunters and lived in small villages. Many of them were farmers and grew corn. The material in this section will tell you about the Indians of the New World. It will tell you where they came from. It will tell you how their life changed over the years. Study the vocabulary carefully. The words will help you learn about the Indians of the New World.

B. Anthropology words I must use:

- agriculture
- Archaic Stage
- astronomer
- Classic Stage
- climate
- domestication
- environment
- extinct
- Folsom point
- Formative Stage
- glaciers
- inhabited
- maize
- Paleo-Indians
- plateau
- plaza
- Pleistocene
- Post Classic
- priests
- pueblo
- pyramid
- reservation
- surplus

C. Key ideas I am to look for and learn about are:

1. Where did American Indians come from?
2. How did the life of the Indians change during the many years before other people came to the New World?
3. Were Indians all over the New World alike?
4. Who were the last people to come to the New World before the people from Europe?

D. Things I can do:

1. Collect pictures of Prehistoric Indians. Make a scrap book with the pictures.
2. Write a play about a day in the life of a Prehistoric child. Write about a certain group of Indians. Ask your teacher to help you. Give the play for your class.
3. If there is an Indian reservation near you, visit it. Give a report to your class about your trip. Tell them what you saw.
4. Draw pictures of the tools used by Indians. Put the pictures on the bulletin board.

E. Questions to help me think:

1. Do you think that the first Indians in the New World knew they were in a New World?
2. Why did the life of the Indians change over a period of years?
3. Indians that lived in the desert lived one way. Indians that lived in the woodlands lived another way. Why were the ways they lived different? Was the land around them the only reason their lives were different?
4. Some Indians hunted large animals. Some Indians raised corn and other things. Some Indians gathered roots and berries. What was the best way to get food? Why?

F. Review questions:

1. Where did the American Indian come from?
2. Indians have been in the New World for about 20,000 years. Did the way they live change during this time?
3. Did all Indians live the same way at the same time?
4. When did the Plains Indians get their horses?

III. THE HOPI

A. Introduction

The Hopi are a group of Indians living in the United States today. In many ways the Hopi are very much like other people living in our country. They farm and raise animals. They wear jeans and plaid shirts like other farmers do. Some work in stores and drive tractors. In other ways the Hopi are like the Indians of the past. Many Hopi live in villages called pueblos. These villages are like the ones their ancestors lived in thousands of years ago. The way they farm has not changed much since prehistoric times. The material in this chapter will tell you about the life of the Hopi today and how that life is changing.

B. Anthropology words I must use:

adobe
cistern
cultivate
culture
dibble
division of labor
extended family
irrigate
kachina
kiva
mano
mesa
metate
piki
progressive
pueblo
reservation
warp
weft

C. Key ideas I am to look for and learn about are:

1. Who are the Hopi?
2. Where do they live?
3. How is Hopi life similar to your life?
4. How is Hopi life different from your life?

D. Things I can do:

1. Write a story about some event in the life of a Hopi boy or girl and draw a picture to go with your story.
2. With the help of your teacher, read about two neighboring Indian tribes of the Hopi, the Apache and the Navaho.
3. Make a Hopi artifact such as a digging stick and show it to the class.

E. Questions to help me think:

1. Why do the Hopi live the way they do?
2. How do we know the Hopi today live like the Hopi of many years ago?
3. Can we learn some things from the Hopi? What?
4. The Hopi children learn how to be Hopi. You learn how to be an American child. How do you learn this?

F. Review questions:

1. Who are the Hopi?
2. What is a pueblo?
3. How do the Hopi get their food?
4. What jobs do the Hopi men do?
5. What jobs do the Hopi women do?

VOCABULARY

abosolute dating - a way of telling the age of an artifact that gives a more or less fixed date.

adobe - dry mud used for building.

agriculture - planting and growing food.

Archaic stage - a period during which the Indians were hunters and gathers.

archeologist - scientists who search for artifacts left by people who lived long ago.

archeology - the scientific study of the artifacts left by people who lived long ago.

artifacts - anything produced by human effort.

astronomer - a scientist who studies the stars.

burial site - a place where people have been buried.

calendrical dating - dating by a calendar.

carbon 14 dating - a method of radio carbon dating. It can be used on any plant and animal material.

ceremonies - celebrations, usually of a religious nature.

cemetery - a place where people are buried.

cistern - a place for storing water.

Classic Stage - the period during which there was an increase in food, priest-leaders and ceremonial centers in Nuclear America.

climate - the average daily weather.

cultivate - prepare and use for crops.

culture - the way of life of a group of people.

dendrocronology - tree ring dating.

dibble - a digging stick.

division of labor - way of dividing up and sharing work.

domestication - when an animal or plant is trained for use by man, in contrast to wild animals and plants.

environment - world in which plants and animals live.

excavate - to dig up carefully.

excavation - a place where digging is done.

extended family - a family unit made up of the father, mother, and children plus other related individuals such as grandparents, uncles and aunts.

extinct - no longer living.

Folsom point - a type of fine shaped spear point that was used by the Paleo-Indian.

Formative Stage - the period during which agriculture developed.

glaciers - big sheets of ice.

glyph - a picture in the Myan writing that stands for something.

habitation - the place where someone lives.

inhabit - to live somewhere.

inorganic material - made from non-living things.

interpret - to make out the meaning of something.

irrigate - to supply with water brought through channels or ditches.

kachina - the spirits of the underworld.

kiva - an underground ceremonial chamber.

laboratory - a place where scientists work and study.

maize - a grain grown at first in the New World and commonly called corn.

mano - the grinding stone held in the hand.

mesa - a flat topped mountain.

metate - the bottom grinding stone.

organic material - made from living things.

Nuclear America - Mexico, Central America, and Peru.

Paleo-Indian - the first Indians in the New World.

piki - a thin pancake made from corn batter.

plateaus - flat-topped mountains.

plaza - an open square in a town.

Pleistocene - the period beginning somewhere between one and two million years ago. Commonly called the Ice Age.

Post Classic Stage - the period during which military leaders took over and real cities developed in Nuclear America.

preservation - the job of keeping something in its original condition.

preserve - to keep something in its original condition.

priest - a specialist in magic and religion.

progressive - wishing to change.

publication - to put information in print so that many people may find out about it.

pueblo - a large compact village where the houses are joined together.

pyramid - a mound of stone or earth with a rectangular base and sloping sides that meet in a point at the top. Pyramids in the New World are stepped and flat on top.

quadrant - one-fourth of something.

reservation - areas of land reserved for the use of the Indians.

site - the place where an archeologist digs for artifacts of long ago.

stela - a stone with writing.

strata - layers.

stratigraphy - a study of the layers of earth in an archeological site.

surplus - when something is left over.

survey - to study carefully and get all the facts about something. An archeologist surveys a site before he digs there.

trenching - digging a ditch, usually with vertical sides.

relative dating - a way of telling the age of an artifact that tells whether an object is older or younger than some other object.

restoration - taking broken things and putting them back together.

warp - the threads that go up and down on a vertical loom.

weft - (also called woof) the threads that go crosswise on a vertical loom.

vertical - in a line, up and down.

APPENDIX

GRADE 2

THE DEVELOPMENT OF MAN AND HIS CULTURE

Completion Sentence Study Exercises

Directions

A set of study exercises has been made for each chapter. The study exercises are made up of sentences with a blank to fill in. Study sentences with blanks to fill in are completion sentences. Complete the sentences by writing the correct word in the blank.

To help you remember the right answer, there are three words under the blank. Select the correct word. Write the correct answer in the blank. Be certain that you spell the word correctly. If you do not remember the right answer, reread your text to find the correct word.

These study sentences have been grouped under a main idea. They will help you to master many of the important ideas in the chapter.

Chapter I

ARCHEOLOGICAL METHODS

Archeology is the study of how people lived in prehistoric times. Archeologists study the things people have left behind so they can tell us about the lives of these people.

1. ______________________________ is the study of how man lived long ago.
(anthropology, climatology, archeology)

2. Scientists who study how man lived long ago are called ______________________________.
(surveyors, photographers, archeologists)

Artifacts are anything which have been made by human effort. Archeologists study the artifacts they find carefully.

3. Everything that man makes is called a(an) ______________.
(tool, artifact, implement)

4. All artifacts ______________ last the same length of time.
(do, do not, might)

5. Artifacts made from plant material and ______________ material do not last a long time.
(rock, mineral, animal)

6. An archeologist can learn ______________ about a culture from artifacts.
(everything, some things, nothing)

7. ______________ means to keep safe or keep from decay.
(disturb, restrict, preserve)

8. Artifacts are usually preserved because they have been ______________ or covered up.
(kept, buried, broken)

9. Artifacts are sometimes put in the ______________ when someone is buried.
(house, garden, grave)

Man has lived in caves, camps, villages and cities. Archeologists look for the places that man has lived. Some places man has only used, and not lived there. Archeologists look for these too.

10. Archeological sites are places that ______________ has used.
(animals, birds, man)

11. A ______________________ site is a place where people lived.
(habitation, ceremonial, hunting)

12. Archeologists look for artifacts where man held ______________________.
(discussions, animals, ceremonies)

13. Archeologists look for artifacts where man killed ______________________.
(time, trees, animals)

14. Archeologists look for artifacts where man chipped ______________________.
(trees, fields, stone)

15. Archeological sites are found wherever man has ______________________.
(rested, been, lived)

16. ______________________ sites provide good preservation.
(Open, Desert, Wet)

17. Sites in tropical forests do not provide good preservation because there is _______ __________ _______.
(too much rain, too much heat, too little rain)

18. Some archeological sites are found in the far north and are ____________________.
(new, frozen, unimportant)

19. Archeological sites are sometimes found because of changes made in the land by nature. An example of this would be ______________________________.
(soil erosion, house construction, road building)

After an archeological site is found the work begins. A site can tell an archeologist many things. An archeologist has many things to do so that he will not over-look anything.

20. ____________________ in archeology means to uncover
a site in a planned way.
(excavation, digging, restoration)

21. An excavation is also called a ____________________.
(dig, drop, dunk)

22. An archeologist excavates very ____________________.
(quickly, carefully, much)

23. An archeologist must keep ________________________
to show what is found.
(friends, trying, records)

24. The archeological site is marked off into
____________________.
(colors, squares, circles)

25. If an archeologist digs up an entire site this is
called ____________________ excavation.
(partial, careless, total)

26. Archeologists use shovels, picks, brushes, rulers, and
many other ____________________.
(weapons, tools, ideas)

An archeologist needs to find out how old the site is in which he is working. He needs to know how old the artifacts are that he finds. He has several ways of finding these things out.

27. The layers of soil that the earth is made of are
called ____________________.
(rocks, parts, strata)

28. An artifact found in the top layer is usually
____________________ than one found in the bottom
layer.
(newer, older, cleaner)

29. Relative dating and absolute dating are two ways of finding out how ____________________ a site or artifact is.
(pretty, important, old)

30. __________________________ dating gives a more or less fixed year.
(absolute, relative, circular)

31. __________________________ dating tells whether an object is older or younger than another object.
(absolute, relative, circular)

32. One kind of absolute dating is done using a calendar. It is called ______________________ dating.
(calendrical, instant, error free)

33. Carbon 14 dating is used to tell the age of __________________________ material.
(organic, inorganic, rocky)

An archeologist has other things to do besides excavate a site and date it. He has work to do in his laboratory. He must think of what he is going to tell other people about what he has found.

34. __________________________ is taking broken things and putting them back together.
(partition, division, restoration)

35. An archeologist should always ________________________ what he finds.
(forget about, keep secret, write about)

36. An excavation can never be __________________________.
(forgotten, left alone, made again)

Answers for the completion sentences:

1. archeology
2. archeologists
3. artifacts
4. time
5. animal
6. some things
7. preserve
8. buried
9. grave
10. man
11. habitation
12. ceremonies
13. animals
14. stone
15. lived
16. desert
17. too much rain
18. frozen
19. an earthquake
20. excavation
21. dig
22. carefully
23. records
24. squares
25. total
26. tools
27. strata
28. newer
29. old
30. absolute
31. relative
32. calendrical
33. organic
34. restoration
35. write about
36. made again

Chapter II

NEW WORLD PREHISTORY

Indians had been in the New World many thousands of years before the coming of the white man. Their culture had changed during this period of time.

1. The study of New World prehistory is divided into
   ________________ stages.
   (many, five, ten)

2. A stage is a level of ____________________ development.
   (cultural, careful, ancient)

3. The Paleo-Indian was a hunter of Ice Age ____________.
   (animals, rocks, fish)

4. The Indians of the Archaic stage hunted smaller game
   and gathered roots, seeds, and ____________________.
   (rocks, berries, animals)

5. The Indians of the Formative stage were mainly
   ___________________ farmers.
   (city, village, specialized)

6. The Indians of the Classic Stage had large
   ___________________ centers.
   (hunting, ceremonial, game)

7. The Indians of the Post Classic Stage had military
   governments and built large ____________________.
   (lakes, carts, cities)

8. A whole series of the five cultural stages took place
   only in _________ __________________.
   (North America, Nuclear America, North Canada)

Archeologists have studied the stages of Indian cultural development very carefully. They have found out many things about how the Indians lived during each cultural period.

9. The American Indian first came to the New World from
   ____________________.
   (Europe, Siberia, Africa)

10. He came many years ago when the climate was very
    ____________________.
    (hot, cold, wet)

11. The Paleo-Indians hunted large Ice Age animals such as the ____________________.
    (penguin, dinosaur, mammoth)

12 Tools made of stone that belonged to the Paleo-Indians have been found. One of these tools was a
   ____________________.
   (chopper, plane, hammer)

13. Indians of the Archaic Stage were hunters and
    ____________________.
    (farmers, weavers, gatherers)

14. Indians in the Archaic Stage also ____________________ with people who lived far away.
    (corresponded, merged, traded)

15. Indians of the Archaic Stage had more ____________________.
    Many of these were made of polished stone.
    (tools, money, houses)

16. Agriculture began in a part of America called
    ______________ ____________________.
    (Central Canada, North America, Nuclear America)

17. The main plant grown during the Formative Stage was
    ____________________.
    (beans, barley, corn)

18. Agriculture made possible ____________________.
(settled villages, stone tools, skin clothing)

The last two stages of cultural development were the Classic and the Post Classic stages. These two stages took place only in Nuclear America.

19. During the Classic Stage there was a ____________ of food.
(shortage, need, surplus)

20. Because there was a ________________ of food, the people had time to do something besides farm.
(shortage, need, surplus)

21. During the Classic Stage the Indians built ceremonial centers. A people who are a good example of this stage are called the ____________________.
(Hopi, Eskimos, Mayas)

22. The Mayas built ceremonial centers. These centers are not real ________________.
(cities, buildings, places)

23. In the center of the ceremonial square was a
________________.
(table, pyramid, tower)

24. The Mayans found out how to use the number
________________.
(one, zero, twelve)

25. Most of the people in Nuclear America during the Classic period made their living by
__________________________.
(digging gold, selling, farming)

26. Indians of the Classic Stage made things from wood, clay, and stone. They also used rubber and
__________________________.
(paper, metal, glass)

27. The ____________________ came into Mexico from the north only three hundred years before the Spanish came.
(Anasazi, Eskimos, Aztecs)

28. Tenochtitlan was the main city of the
______________________________.
(Anasazi, Eskimos, Aztecs)

29. It was a beautiful city. ______________ was brought in from the mountains.
(wood, grain, water)

30. The Spanish conquest ____________________ Indian society.
(helped, preserved, disrupted)

31. Indians who did not like living under the rule of the Aztecs helped ________________ defeat the Aztecs.
(Cortez, Mendez, the Hopi)

In North America cultural development did not go beyond the Formative Stage. Indians in North America lived in many different ways.

32. The growing of maize (corn) spread from Nuclear America to the Eastern Woodlands and the
______________________ of North America.
(Northwest, Southwest, Highlands)

33. The Archaic Stage of hunting and gathering slowly gave way to living in ____________________ and the growing of maize.
(trees, valleys, villages)

34. The Anasazi were the ancestors of the modern
______________________________.
(Cherokee, Greeks, Hopi)

35. The Anasazi lived on the top of flat mountains
called ___________________________.
(peaks, dells, mesas)

36. They grew tobacco, pumpkins, and ____________________.
(flowers, wheat, corn)

37. The large compact villages of the Anasazi are
called _____________________________.
(pueblos, plateaus, partas)

38. Farms of the Anasazi were located ___________________
the village.
(inside, outside, far from)

Two cultures in North America developed much later than any of the others. The Eskimos were the last group to come to the New World before the white man. The Plains Indian culture did not develop until after the white man had brought horses to the New World.

39. Eskimos live in the ___________________________.
(Arctic, desert, mountains)

40. Eskimos came to North America in _____________________
times.
(fairly recent, ancient, unknown)

41. The Plains Indian is a(an) _________________________
Indian. This means his culture developed after the
white man descovered the New World.
(Prehistoric, historic, archaic)

42. Plains Indians are not a(an)________________________
example of American Indian Life.
(typical, unusual, popular)

43. The typical American Indian lived in settled villages and made his living by ______________________. (trading, farming, fishing)

44. The typical American Indian also got meat by ______________________. (raising animals, shopping, hunting)

Answers for the completion sentences:

1. five
2. cultural
3. animals
4. berries
5. village
6. ceremonial
7. cities
8. Nuclear America
9. Siberia
10. cold
11. mammoth
12. chopper
13. gatherers
14. traded
15. tools
16. Nuclear America
17. corn
18. settled villages
19. surplus
20. surplus
21. Mayas
22. cities
23. pyramid
24. zero
25. farming
26. metal
27. Aztecs
28. Aztecs
29. water
30. disrupted
31. Cortez
32. Southwest
33. villages
34. Hopi
35. mesas
36. corn
37. pueblos
38. outside
39. Arctic
40. fairly recent
41. historic
42. typical
43. farming
44. hunting

Chapter III

THE HOPI

The Hopi are an Indian tribe living in the United States today. By studying the Hopi anthropologists learn about how Indians of long ago may have lived.

1. The Hopi are ______________________________ Indians.
   (pueblo, ancient, wild)

2. Pueblo means ______________________.
   (red, village, hunting)

3. Land set aside for Indians to use is called a
   __________________________________.
   (plot, reservation, camp)

4. The Hopi reservation is in Northern __________________
   (Arizona, Maryland, Canada)

5. The top of Black Mesa where the Hopi villages are is very flat. Mesa is a Spanish word which means
   ______________________________.
   (chair, cup, table)

6. The villages are built on fingers of the mesa which are called ___________________________.
   (spurs, points, drops)

The Hopi are farmers. Because the land where they live is hot and dry the Hopi must work hard to grow their crops.

7. At the bottom of the spurs the Hopi have their
   _______________________________.
   (houses, ceremonies, gardens)

8. The Hopi land is rocky, sandy, and ____________________.
(wet, dry, cold)

9. In Hopi land there are no trees, and very little
__________________________________.
(sand, sunshine, rain)

10. It is very hard work to grow a ______________________.
(rug, crop, house)

Many of the homes of the Hopi are like those of their ancestors. They have changed very little over many thousands of years.

11. Probably the oldest village in the United States
that is still lived in is _________ _________________.
(Pecos, New Orleans, Old Oraibi)

12. People first lived in this village about ______________
before Columbus discovered America.
(350 years, 2 months, 100 years)

13. The houses in this village are built of stone and
______________________________.
(lumber, plaster, adobe)

14. Adobe is ___________ _______________.
(hard rock, dry wood, dry mud)

15. New Oraibi is a progressive village. Progressive
means a wish to ______________________.
(progress, regress, forget)

16. The Hopi living room is used for ________________
______________.
(sitting in, sleeping in, many purposes)

Many parts of the Hopi culture have not changed in thousands of years. Many tools are the same as those used by their ancestors. Much of the work is done in the old way. But in some ways they are like other modern people.

17. Hopi have very few ____________________________.
(tools, baskets, clothes)

18. A dibble is a _______________ _________________________.
(large ball, throwing stick, digging stick)

19. The Hopi grind corn on a large stone slab with a smaller stone held in their hand. The large stone is called a metate. The stone held in the hand is called a _________________________________.
(dorb, rab, mano)

20. The Hopi hunt ______________ _________________________.
(large animals, small game, shell fish)

21. The modern Hopi wear clothes like that of other
___________________________ _________________________
(ancient Indians, city dwellers, farm families)

22. Hopi men work at handicrafts. They make moccasins, kachina dolls, and ________________________.
(sew, bake, weave)

23. The threads that go up and down on a loom are the
____________________ _____ threads.
(warp, wep, flap)

24. Hopi women make pottery and __________________________.
(kites, baskets, arrows)

25. The main food of the Hopi is __________________________.
(eggs, wheat, corn)

26. A thin flat pancake made from corn batter is called a
___________________________. (kiva, piki, parka)

27. The Hopi are mainly ______________________________.
(farmers, hunters, bakers)

28. Because there is very little rain the Hopi must get water for their crops by __________________________.
(truck, irrigation, wells).

29. Water for irrigation is held in a ____________________.
(bucket, cistern, house)

30. Dividing up of work is called ________________________
________ ____________________________.
(division of labor, loss of time, separation of tasks)

31. Hopi men do most of the ______________ _______________.
(shopping, light work, heavy work)

32. Hopi women do the ________________ ____________________.
(house work, farm work, blanket weaving)

33. Many things are made from corn. Some of these are corn mush, corn bread, hominy, and ____________________
______________________.
(white bread, dry noodles, corn flour)

34. Hopi corn is not planted in rows. It is planted in
_____________________________________.
(ditches, clumps, hills)

35. The Hopi raise sheep and _______________________________.
(rabbits, cattle, goats)

36. Flocks of sheep are kept mainly for their
________________________________.
(meat, wool, milk)

37. A family unit that is bigger than a small family of father, mother, and children is called an
__________________________________ family.
(extended, ancient, old)

38. Hopi families are an example of ____________________ families.
(extended, ancient, old)

39. Hopi children learn much about what they will do when they grow up by watching the ____________________.
(other children, adults, outsiders)

40. The Hopi believe in spirits that live in the underworld. They are called ____________________.
(metates, Aztecs, Kachinas)

41. The most famous rain making ceremony of the Hopi is the ____________________.
(snake dance, rabbit dance, bird dance)

42. An underground ceremonial chamber is called a ____________________.
(Lava, Kiva, Guva)

Answers for the completion sentences:

1. pueblo
2. village
3. reservation
4. Arizona
5. table
6. spurs
7. gardens
8. dry
9. rain
10. crop
11. Old Oraibi
12. 350 years
13. adobe
14. dry mud
15. progress
16. many purposes
17. tools
18. digging stick
19. mano
20. small game
21. farm families
22. weave
23. warp
24. baskets
25. corn
26. piki
27. farmers
28. irrigation
29. cistern
30. division of labor
31. heavy work
32. house work
33. corn flour
34. hills
35. cattle
36. wool
37. extended
38. extended
39. adults
40. kachinas
41. snake dance
42. kiva

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TEST: FORM 2
Composite Form for Pre- and Post-Test

Publication No. 41

Anthropology Curriculum Project
University of Georgia
Athens, Georgia

Revised January, 1968

Name______________________________ Age______

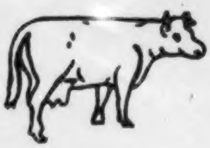
Teacher____________________________ Grade ______

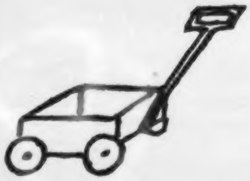
School ______________________________________

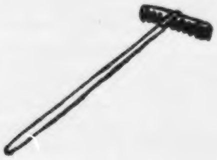
City_______________________________ Score ______

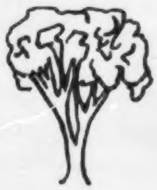
Sample A

Mark the picture which shows a toy.

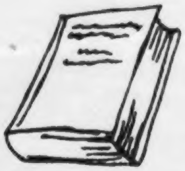


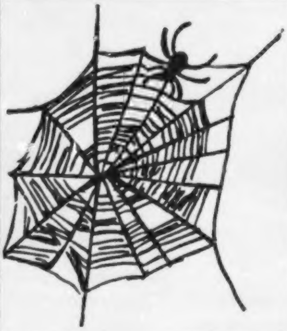


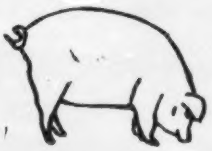


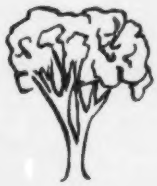


1. Mark the picture which shows an artifact.

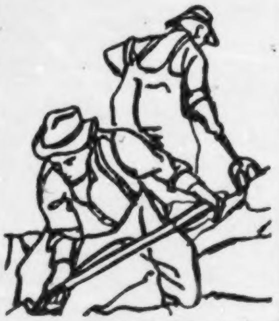


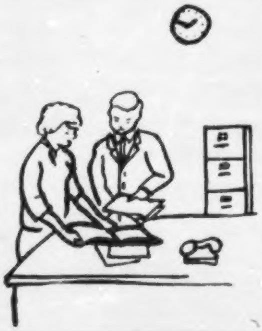


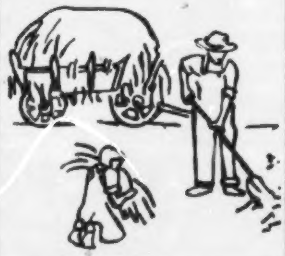


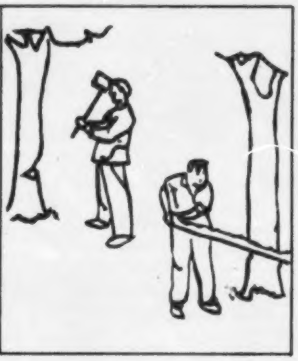


2. Mark the picture of the people who look **most** like archeologists at work.

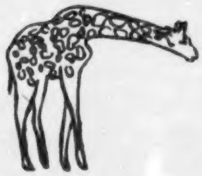


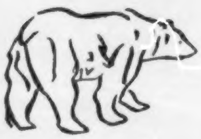


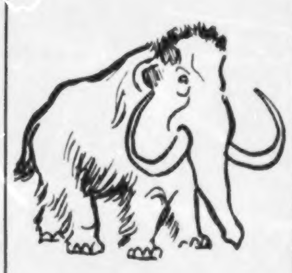


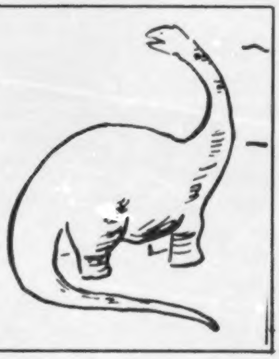


3. Mark the animal which was hunted by the Paleo-Indians.

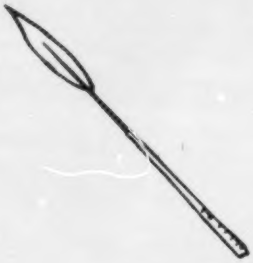
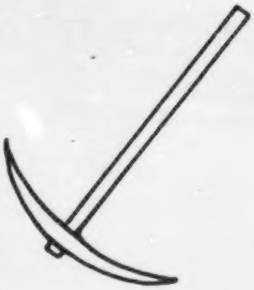
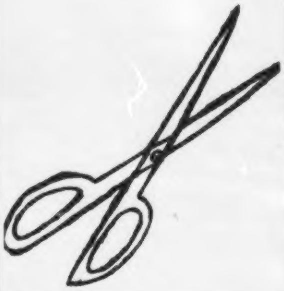
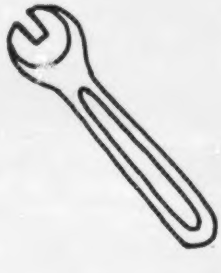




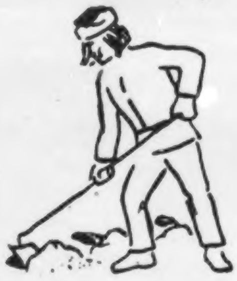
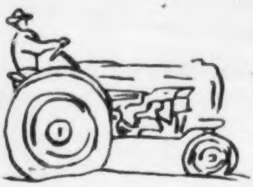
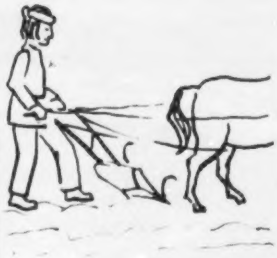
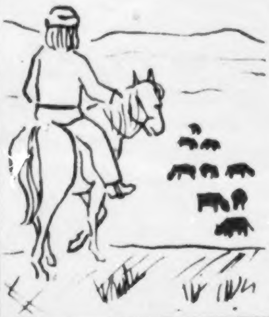




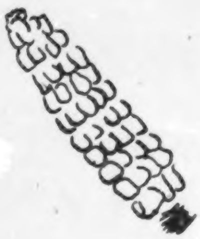
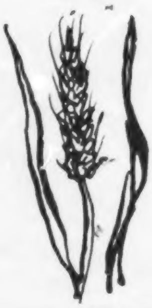
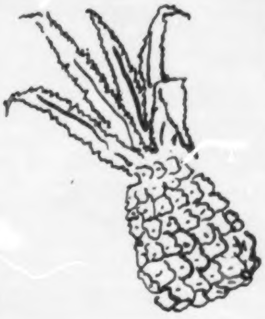
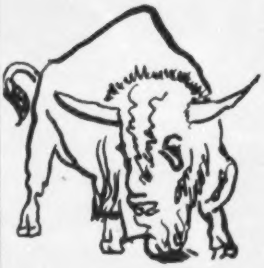
4. Mark the tool which the archeologist uses in excavation.

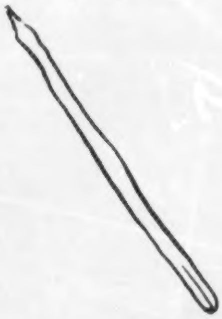
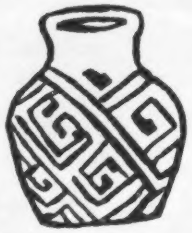
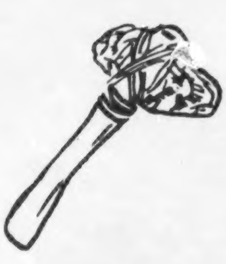
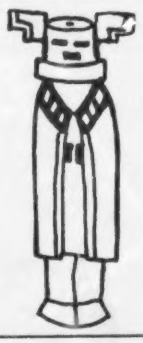
5. Mark the picture which shows the way Hopi Indians plant corn.

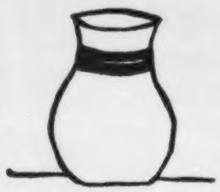
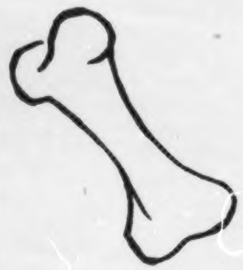
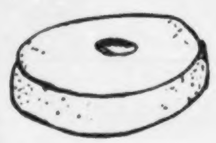
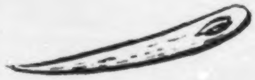
6. Mark the picture which shows the MAIN food of the New World Indians.

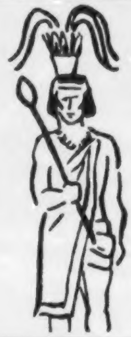
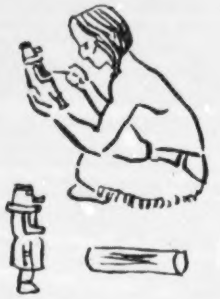
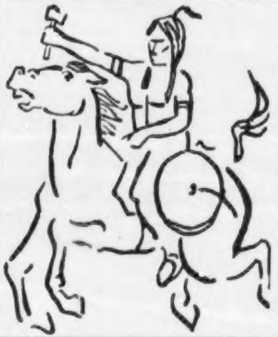
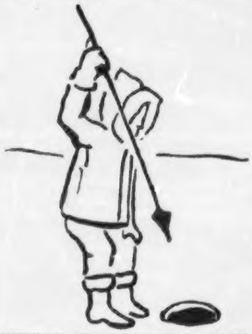
7. Mark the picture which shows a Hopi religious artifact.

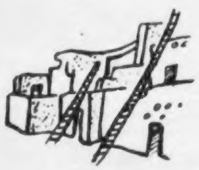
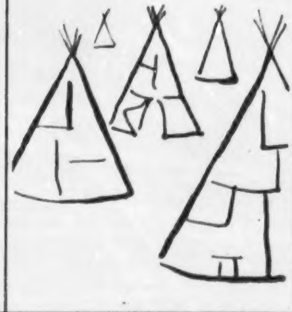
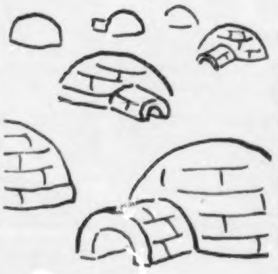
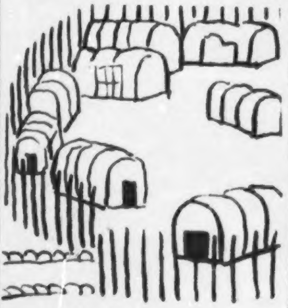
8. Suppose these things were found at a place where people lived long ago. Mark the one which tell us that the people wore clothing.

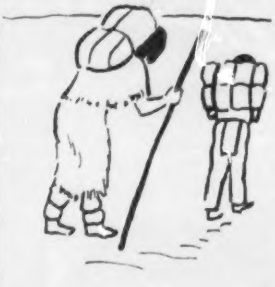
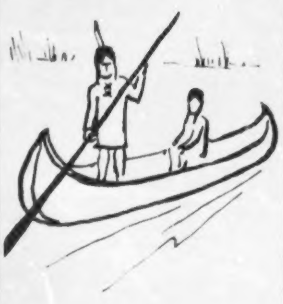
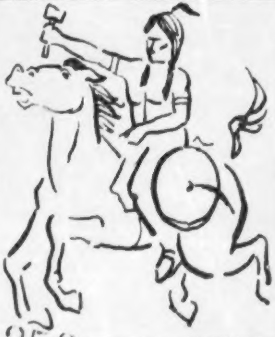
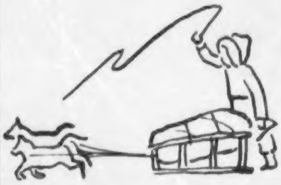
9. Mark the one who looks MOST like a Plains Indian.

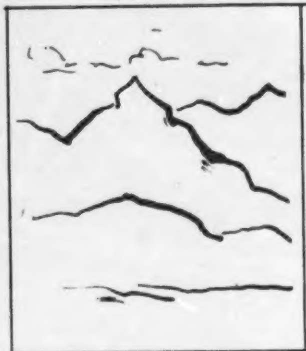
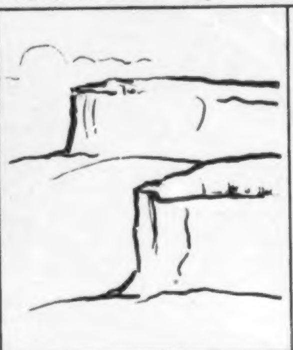
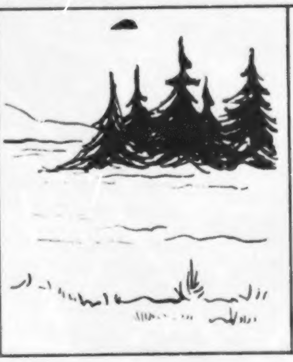
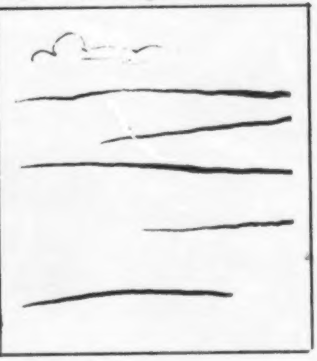
10. Mark the picture which shows a Hopi pueblo.

11. Mark the picture which shows how the FIRST people came into the New World.

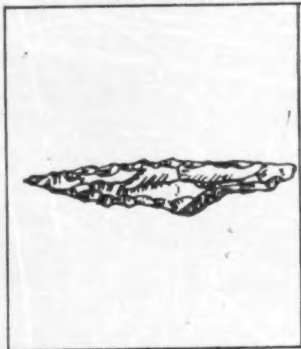
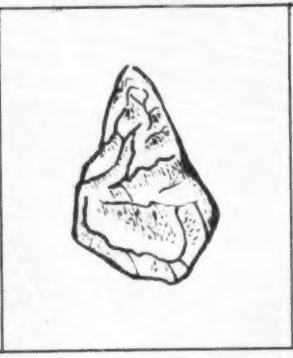
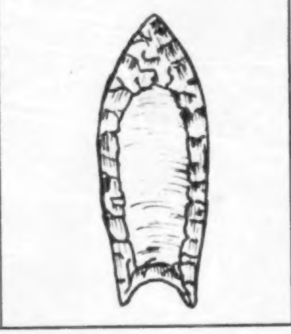
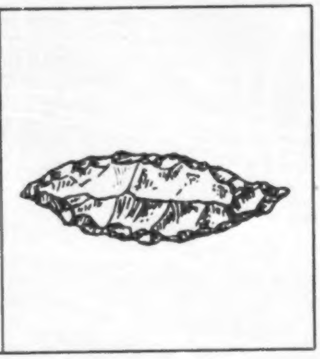
12. Mark the picture which shows where the Hopi Indians would MOST LIKELY build their village.

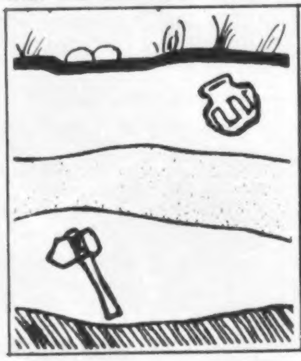
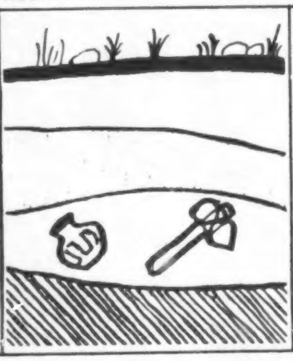
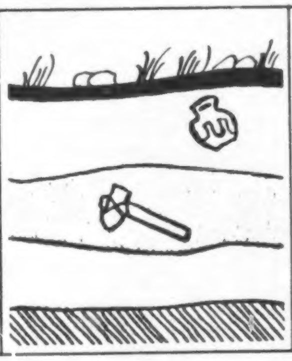
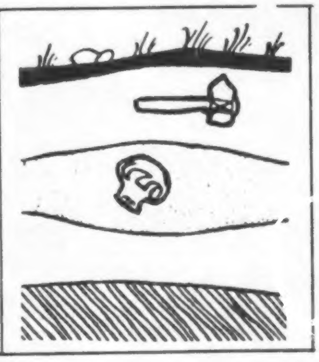
13. Mark the words which tell what kind of land the Hopi Indians have.

WET AND MUDDY	GOOD FARMLAND	DRY AND SANDY	FOREST LAND

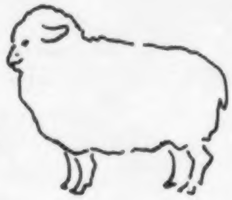
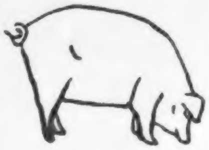
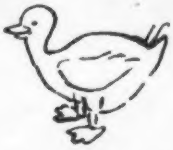
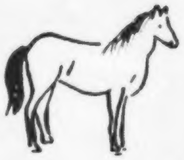
14. Mark the picture which shows a Folsom point.

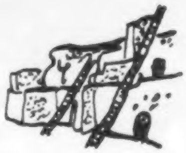
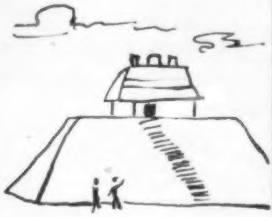
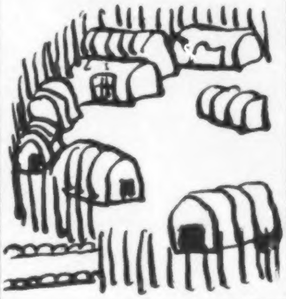
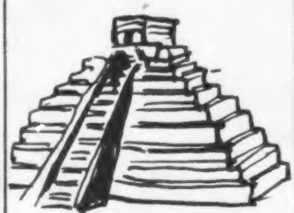
15. Each of these pictures show an axe and a vase buried under the ground. Mark the picture which shows that the axe was buried FIRST.

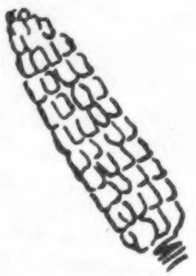
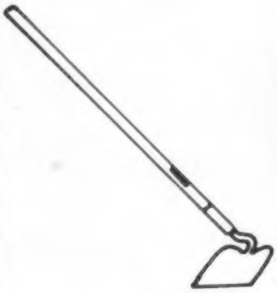
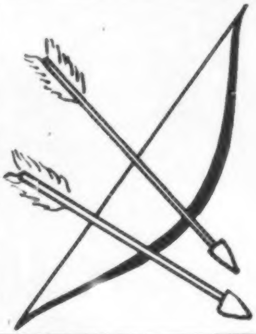
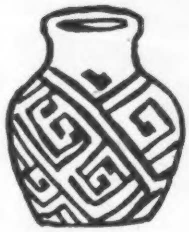
16. Mark the animal which is **most important** to the Hopi Indians in their economy.

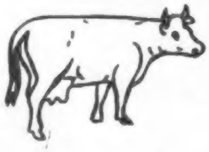
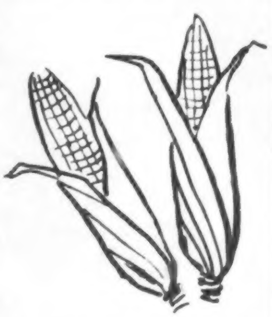
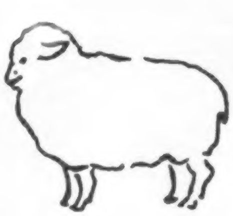
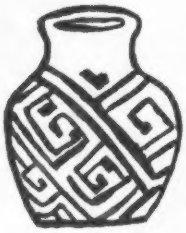
17. Mark the picture which shows a Mayan ceremonial center.

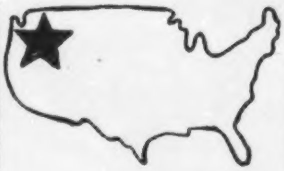
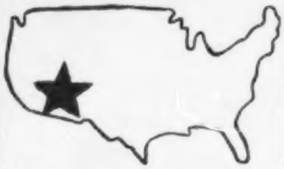
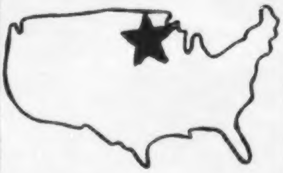
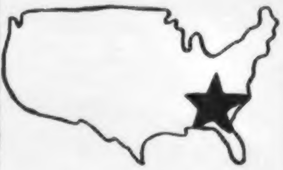
18. Mark the picture of something which comes into the Hopi culture by trade.

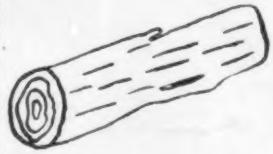
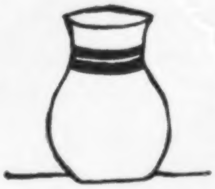
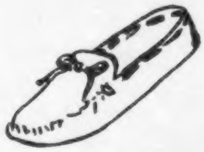
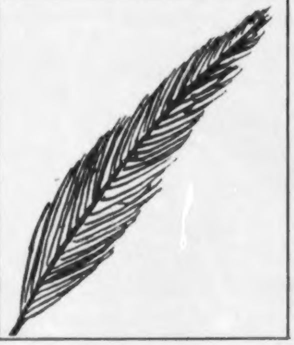
19. Which of these would the Hopi Indians MOST LIKELY sell for money?

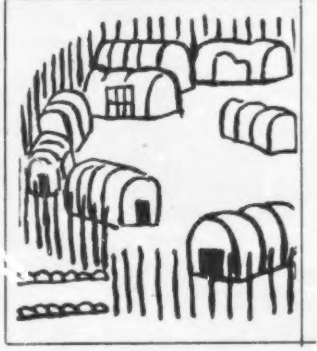
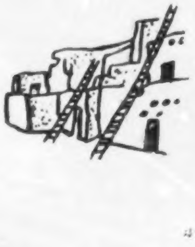
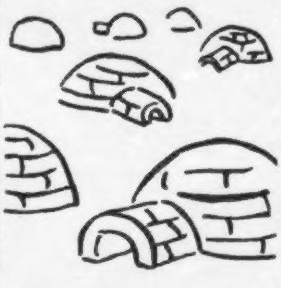
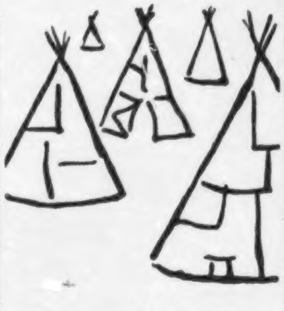
20. Here are four maps of the United States. A place on each map is marked with a star. Mark the one which shows where the Hopi Indians live.

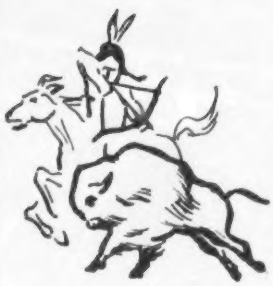
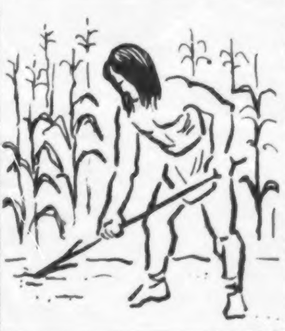
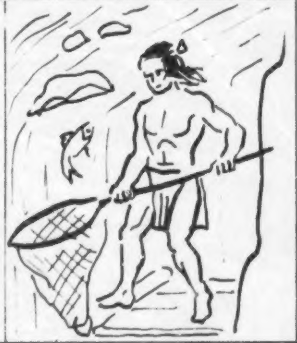
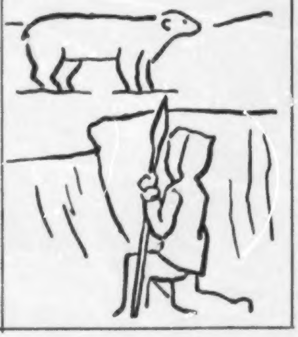
21. Suppose these things were buried together. Mark the one which would MOST LIKELY last 500 years.

22. Mark the one which looks MOST like an Indian village in the Eastern woodlands.

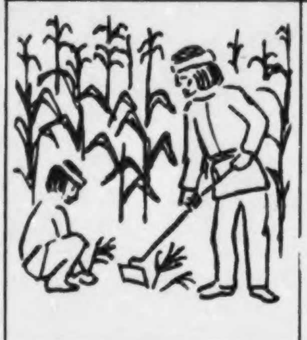
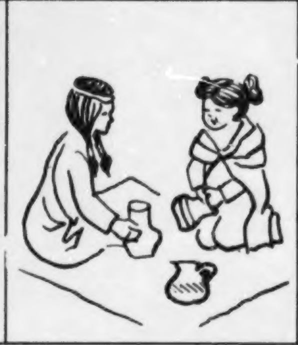
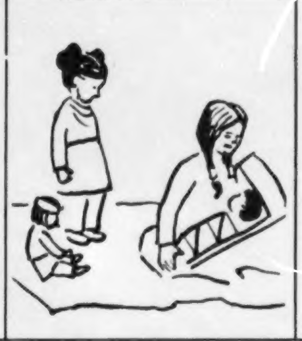
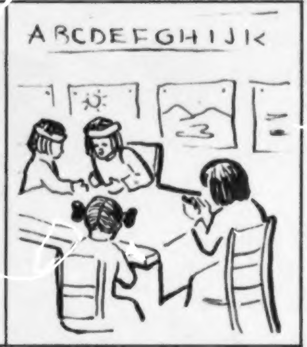
23. Mark the picture which shows how the Indians in the Formative Stage got **most** of their food.

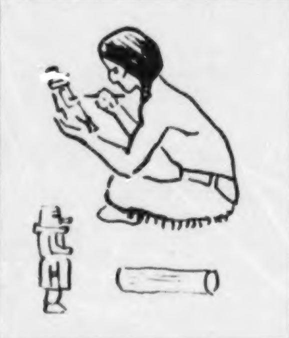
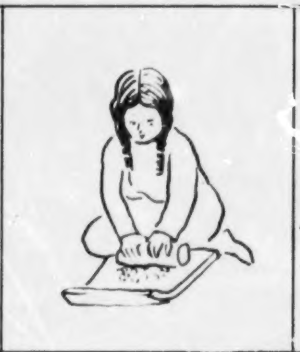
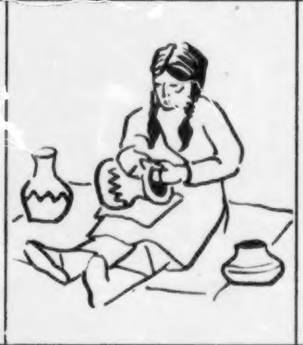
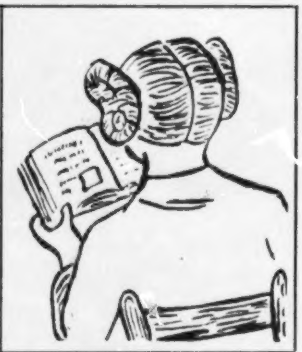
24. Where would artifacts probably last LONGEST?

IN A SWAMP	IN A FOREST	IN A CAVE	IN A FIELD

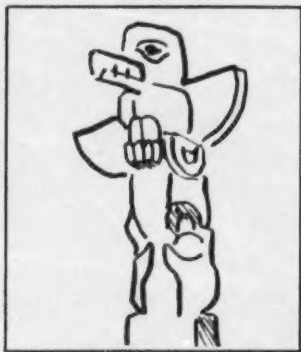
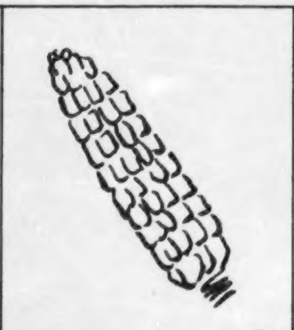
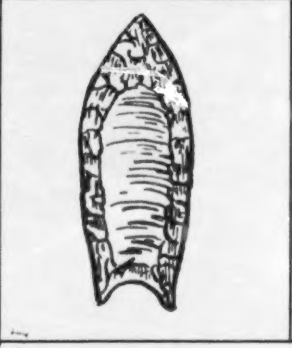
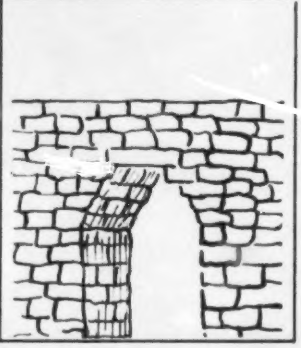
25. Mark the picture which shows a way that Hopi children learn about **other** cultures.

26. Mark the picture which shows that the Hopi culture is changing.

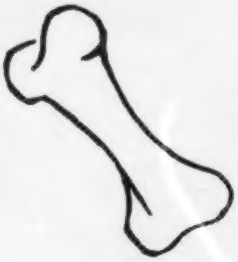
27. Mark the thing which was used by the Paleo-Indian.

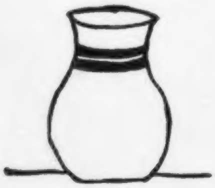





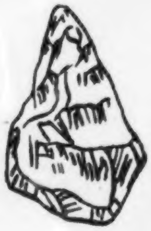
28. Mark the words which tell what we CANNOT learn about prehistoric people.

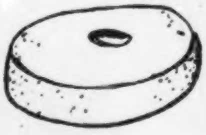
WHAT TOOLS THEY USED	HOW THEY TALKED	WHAT THEY ATE	WHAT THEY WORE

29. Mark the thing which can be dated by the Carbon 14 method.

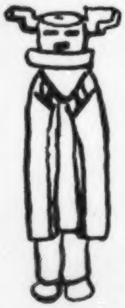


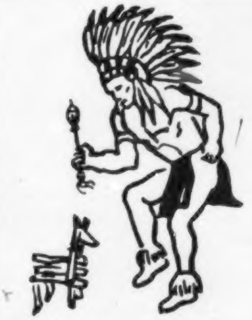


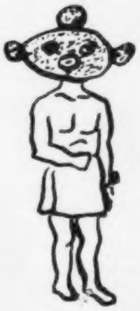


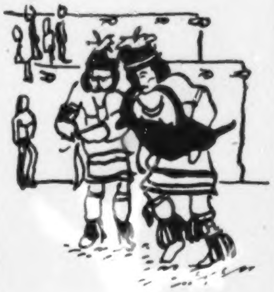


30. Mark the picture which shows a Hopi rain-making ceremony.









EXPERIMENTAL MATERIAL, 1968

Developed 1966 by Marilyn J. McCrary, under the supervision of Dr. Albert J. Kingston, Jr.; Revised 1968 by Robert L. Turknett under the supervision of Dr. Albert J. Kingston and Dr. E. Paul Torrance. To be used in connection with "A Sequential Curriculum in Anthropology. Grades 1-7." The curriculum development reported herein was performed pursuant to a contract with the United States Office of Education, Department of Health, Education and Welfare, under the provision of the Cooperative Research Program (Contract H-128/OE 4-10-204).